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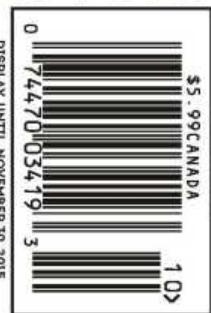
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SHAPE UP AND TONE EVERY INCH!

Achieving your best body ever takes sacrifice and determination. But it also requires the right workouts, exercises and diet to get you there. In this month's FitnessRx, we provide all the tools you need to get sculpted, strong and tight!

In order to lose fat and achieve a six-pack, you need an effective fat-burning, healthy diet that you'll actually stick with, as well as an intense training program to really set you on the right track for success. In "Flat Abs Belly Burn Workout and Diet with IFBB Pro Justine Munro" by Lisa Steuer on page 42, check out the ultimate program to help you burn belly fat fast. Our cover model demonstrates an effective flat abs workout that engages all aspects of the core for optimal results. Plus, our Flat Abs Belly Burn Diet includes delicious, healthy and easy recipes and a two-week meal plan to really help you burn fat and get healthy. We are so excited for you to try out this detailed program—when you try it, let us know how it's working for you!

You may think that the Smith machine is just for squats and presses, but it's actually a very versatile machine that can benefit your entire body. In "Become A Glute-Smith: Shape Up With One Versatile Machine" with IFBB Bikini champion Ashley Kaltwasser by Jaime Baird on page 50, we show you how to sculpt a killer lower body using just one piece of equipment. This is perfect for when you are short on time, or if you just want to change things up. In addition, because of its fixed up and down movement, the Smith machine offers several benefits to help us reach our training goals, including stability, form adjustments and more.

Everyone wants flat and sculpted abs. But while you are working toward that goal, why not build your arms and shoulders, too? In "Get Sculpted and Strong: Arms and Abs with IFBB Figure Pro Candice Lewis" by Lisa Steuer on page 58, get ready to increase the intensity with Candice's abs and arms/shoulders workouts. As a fit and strong IFBB Figure Pro, Candice is the perfect role model when it comes to getting strong and tight. You can do these workouts on the same day a few times a week or on separate days if you want to change things up. Either way, get ready to get sculpted and strong!

In terms of training priority, the back often gets the shaft. But when you have strong and conditioned trunk muscles, it makes for a balanced and healthy body. Plus, a great v-taper makes your waist appear smaller. In "Back to Back with Four-time IFBB Figure Olympia Champion Nicole Wilkins," by Jaime Baird on page 66, take a look at how the champ trains. Nicole is seeking her fifth Olympia title and continues to make improvements—which is clear, because she has one of the best backs in the business. So if you want to improve your back, try out the program and get ready to see results.

This year, the U.S. women's national soccer team made headlines when they won the World Cup. For soccer star Christen Press, it was a dream come true to be part of the team and she even scored a goal in a game against Australia. In "Yoga Trends" on page 96, Christen chatted with us about how yoga and meditation have improved not only her performance, but also her well-being and mental health.

As usual, the rest of the issue is packed with the most cutting-edge tips, workouts and advice from the experts as well as scientifically backed research on exercise, healthy eating and achieving your best body ever. Get ready to tone up, incinerate fat and shape up now.

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LETTER OF THE MONTH

TINY WAIST AND TIGHT BUTT

All my life I have been cursed with a thin frame with no curves. But recently I have been inspired by IFBB Bikini Pro Sara Back and religiously practice her Tiny Waist and Tight Butt Program from the August 2015 issue. The results have been out of this world! Her step-by-step glutes and abs workout and her daily diets have been more than helpful, and I love the way I feel after I finish each workout. Her advice and skills have been the most effective for me. I am looking forward to the next issue!

Sarah Dunbar
Email

BIKINI SEASON BLAST-OFF

I really like the Bikini Season Blast-off workouts from the August issue. I admit that my balance and coordination could use a little bit of work, and this workout is pretty challenging for beginners, such as myself. But the techniques really help me push through, and I always feel great once I'm done. I always like to switch up my exercises, and I was really pleased to see this awesome feature in the magazine. Thank you so much for helping me get stronger!

Shannon Perkins
Email

FABULOUS FLAT ABS

I have been following Callie Bundy on social media for a while, and not only is she hilarious but she is also a fitness inspiration! So I was really excited to see her on the cover in the August issue and check out her workout ["Fabulous Flat Abs," August 2015]. This workout introduced me to some new moves that I hadn't already been doing, including the Bosu Ball V-up and the Sprinter move. For me, developing a strong core has always been a challenge but I feel like I'm improving each time I do this workout. Thanks for the great issue and amazing cover with Callie!

Lisa Connor
Email



Send us your comments!
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CORE TRAINING FOR REDUCING BACK PAIN

I always really enjoy your "Info-Bits" that appear at the beginning of the magazine. And most recently, I believed that months and months of rehabilitation and physical therapy was the key to solving my lower back pain issues. But after reading FitnessRx's Health Info-Bit [August 2015] on how improving core training can decrease back pain, I was amazed. For years I have been subjected to back discomfort, and on countless occasions, I need my spine to be adjusted from three to four times a week. Now, religiously practicing abdominal workouts to strengthen my core has balanced out my torso, causing a stress-free feel on my spine. I am already two weeks in and I can feel the results.

Jennifer Mayer
Email

FAT-BLASTING RECIPES

I see new, healthy recipes and ingredients all the time, but the fat-blasting recipes that are featured in your magazine, especially the ones for the August 2015 issue, are so great. I find myself ripping out recipes and sticking them onto my fridge and have tried at least 10 recipes that have successfully done the job of maintaining a healthy, clean lifestyle, without the paranoia of gaining weight. Consuming these meals and progressing my daily workouts has shown a tremendous difference in my body. I can't thank you enough!

Karen Pope
Email

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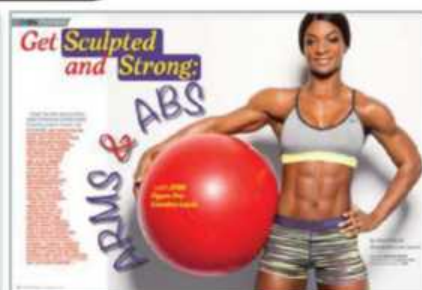
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JUSTINE MUNRO
Photo by MICHAEL NEVEUX

Styling by Trish Stella
Hair and makeup by Teri Groves
Training apparel by Forever 21
Footwear by Nike



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With Ashley Kaltwasser

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DIET GIRL**

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OCTOBER 2015

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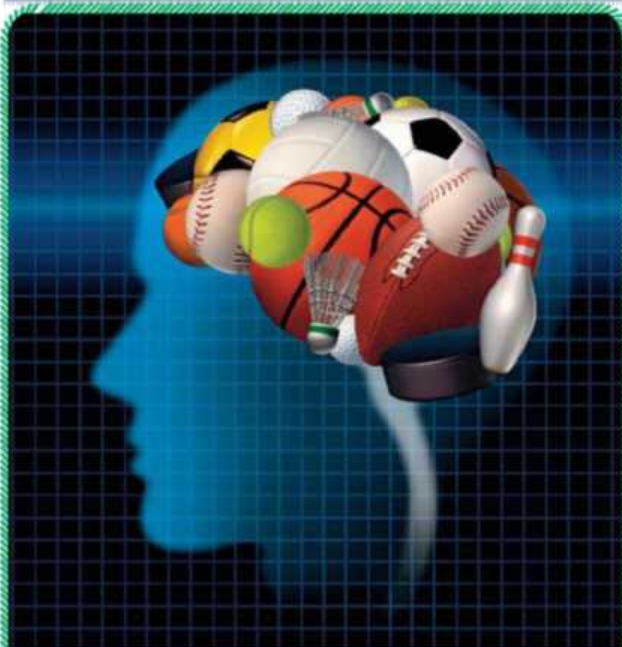
NATURAL LIP JAM: SKIN REJUVENATION VIA PULSED ELECTRICAL FIELDS

SHORT REST INTERVALS CONDITION BEST DURING BATTLING ROPE EXERCISE

■ Battling rope exercises involve oscillating two large ropes, either one rope at a time or both ropes at the same time. They are excellent functional training exercises that require explosive movements in the athletic position. Nicholas Ratamess and

coworkers from the College of New Jersey found that battling rope exercises increased oxygen uptake above 50 percent of maximum and that one-arm exercises were more stressful than two arms. The greatest energy loads occurred when using

one-minute rest intervals compared to two minutes. Battling rope exercises provide a significant metabolic stress and are effective conditioning exercises. (*Journal Strength Conditioning Research*, published online May 30, 2015)

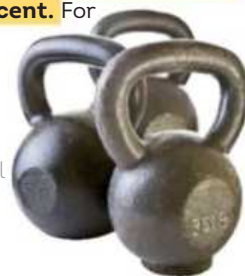


TRAINING THE MIND FOR SPORT

■ Anyone who has ever competed at a high level of sport knows that controlling the mind is often the difference between winning and losing. At high levels, everyone is physically skilled and gifted, so the winner is often decided by whoever has the strongest mind. For more than 100 years, scientists have known that central nervous system fatigue can limit performance. **A new area of neuroscience is helping people harness brainpower to focus better, tolerate pain and fatigue, and control emotions.** A device called the Focus is a commercially available brain stimulation device aimed at conditioning the brain for sport. As usual, entrepreneurs have produced products that are not quite ready for prime time, but the science is promising. (*NewScientist*, May 30, 2015)

HIGH-REP Kettlebell Snatches **BUILD** **AEROBIC CAPACITY**

■ A kettlebell is a large iron ball connected to a handle. There is nothing new about kettlebells. Since the 19th-century, people have used them to build lean, powerful, lightning-fast physiques. The kettlebell snatch is a key exercise in kettlebell-training routines. The exercise appears simple, but requires coordinated, linked contractions of the thigh, butt, core and upper body muscles to do it properly. **A study from San Jose State University led by Asher Falatic and Peggy Plato found that a high-rep kettlebell workout (15 seconds of snatches followed by 15 seconds of rest for 20 minutes) improved aerobic capacity by 6 percent.** For comparison, a control group practiced circuit training and made no improvement in aerobic capacity. Kettlebell workouts can potentially develop strength and aerobic fitness that will improve athletic performance. (*Journal Strength Conditioning Research*, 29: 1943-1947, 2015)



Higher Weight Training Volume **Causes Greater** **Post-exercise Drop** **in Blood Pressure**

■ Weight training and aerobics trigger temporary decreases in resting blood pressure after exercise, a phenomenon called post-exercise hypotension. **While the possible health benefits of post-exercise hypotension are not known, some scientists have speculated that it may contribute to the effects of exercise in lowering resting blood pressure.** Roberto Simão from Federal University of Rio de Janeiro in Brazil, and colleagues, found that weight-training programs involving five sets of eight different exercises were superior to routines using three sets or one set for reducing blood pressure after exercise. While these findings are interesting, the long-term consequences or health benefits of post-exercise decreases in resting blood pressure are unknown. (*Journal Strength Conditioning Research*, 29: 1556-1563, 2015) »

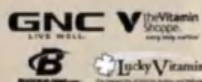
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ISOMETRIC TRAINING Builds Core Stiffness

■ For more than 100 years, traditional core training included exercises such as sit-ups, back extensions and twists. Isometric core exercise might be a better way to develop core strength and stiffness. **Core stiffness is vital for athletes because it strengthens muscles, improves muscular endurance, reduces low back pain and boosts sports performance.** Greater core stiffness transfers strength and speed to the limbs, increases the load-bearing capacity of the spine and protects the internal organs during sports movements.

A landmark study by Benjamin Lee and Stuart McGill showed that isometric exercises for the core resulted in greater core stiffness than performing whole-body, dynamic exercises that activated core muscles. Isometric core exercises include planks, bird dogs, side-bridges, torsional buttress, pallof presses, stir-the-pot, carry exercises, inverted rows and cable wood chops. Dynamic core exercises included curl-ups, Supermans, side curl-ups, twisting curl-ups, advanced curl-ups, back extensions, Russian barbell twists, curl-up twitches, Superman twitches, lateral medicine ball throws and rotational medicine ball throws. The results of this study cast doubts on traditional core-training methods. This is an extremely important study that might change the way we train for sport. (Journal Strength Conditioning Research, 29: 1515-1526, 2015)



Photo: Per Bernal

INTERVAL TRAINING AND WEIGHT TRAINING BUILDS STRENGTH AND ENDURANCE

■ High-intensity interval training (HIIT) involves repetitions of short bouts of high-intensity exercise followed by rest. Endurance training interferes with strength training because it triggers different biochemical pathways leading to improvements in either strength or endurance. HIIT is extremely intense and might not interfere with strength gains. British researchers led by Jamie Pugh from Loughborough University in the United Kingdom found that combining resistance exercise with HIIT activated the mTOR pathway and suppressed myostatin, which results in accelerated protein synthesis. Combining HIIT and weight training in a single workout is a good way to build strength and endurance simultaneously. (Physiological Reports, 3(4): E12364, 2015)

NON-MOTORIZED TREADMILLS GAINING TRACTION



■ In the 1950s, primitive gym treadmills were not motorized. They depended upon leg power to move the belt. Guess what? Non-motorized treadmills are back in their popular in high-end gyms and CrossFit competitions. They are more high-tech than the originals. People move the belts by moving their feet, but the belt speeds up as the person reaches the top of the treadmill and slows down when he or she drifts backwards. **The level of difficulty is about 30 percent greater with non-motorized treadmills at the same relative speed.** The belt speeds up or slows down according to the effort of the exerciser, which makes them excellent for high-intensity interval training workouts. They also cut down on injuries: the belt stops when the person stops. (The Wall Street Journal, July 6, 2015)

Higher Step Height Triggers Greater Blood Lactate Concentrations



■ High blood lactate levels are linked to high-intensity exercise. They reflect the types of motor units recruited (i.e., slow-twitch versus fast-twitch) and blood lactate clearance capacity. A study by Brian Nguyen and Trevor Gillum found that performing a one-minute step test on a 40-centimeter high step resulted in greater blood lactate concentration than using a 20-centimeter step. The higher step required greater power and the recruitment of more powerful motor units, which resulted in greater blood lactate concentrations. (Journal Strength Conditioning Research, 29: 1578-1583, 2015) ■

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Interval Training HAS NO EFFECT ON FAT OXIDATION

■ Interval training causes substantial increases in fitness and physiological capacity. **Recreationally active people improved aerobic and exercise capacity by 15 to 20 percent, glycogen storage by 28 percent, and mitochondrial enzyme levels by 38 percent in only a few weeks of training.** Many people exercise to control body composition, but the effects of interval training on weight control are not clear. Danish researchers found that six weeks of high-intensity interval training (HIIT) increased maximal oxygen consumption substantially but had no effect on fat metabolism in fat cells. HIIT increased mitochondria (cell powerhouses) in skeletal muscle but not in fat cells. HIIT is a terrific way to build aerobic capacity rapidly, but it should be complemented by traditional aerobic training for optimal fat loss. (*Scandinavian Journal Medicine Science Sports*, 25: e59-e69, 2015)

WAKAME SEAWEED FIGHTS FAT

■ Wakame (brown) seaweed contains a chemical called fucoxanthin (FX) that inhibits fat cell growth and promotes fat release. A review of literature by scientists from Ukraine and Korea noted that most studies on FX have examined its effect on rats and mice. To date, no large-scale studies have been done in humans. Animal studies have shown that FX reduces total body fat and abdominal fat, promotes blood sugar control, prevents fat accumulation in the liver and improves the blood fat profile. Studies have found that FX increases brown fat activation and increases energy expenditure. Brown seaweed is a natural product with no known toxic effects. (*Nutrition, Metabolism & Cardiovascular Diseases*, published online June 3, 2015)



REVERATROL PROMOTES BROWN FAT FORMATION

■ Red wine, grape seeds, blueberries and strawberries contain a powerful chemical called resveratrol that prevents cell damage, increases HDL (good cholesterol) and prevents blood clot formation and chronic inflammation. Studies on mice and rats found that resveratrol increased lifespan, prevented cancer and cardiovascular disease, and improved blood sugar regulation. Chinese researchers, in a study on mice, found that resveratrol promoted brown fat formation, which results in more calories dissipated as heat instead of stored as fat. Resveratrol has powerful effects on metabolism that could protect the body from premature aging. Resveratrol might be the Fountain of Youth among athletic food supplements. The researchers concluded that it was better to get resveratrol from foods rather than supplements. (*International Journal Obesity*, 39: 967-976, 2015).

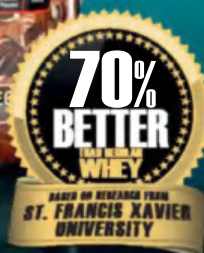


VITAMIN D DECREASES INFLAMMATION LINKED TO OBESITY

■ Vitamin D is synthesized in the body in a reaction involving sunlight. It can also be consumed in the diet by eating fatty fish, mushrooms and supplements. **Low vitamin D levels are linked to poor bone health, muscle weakness, deficiencies in reproductive hormones, low aerobic capacity and increased body mass index (the proportion of weight to height).** A review of literature led by Aaron Slusher from the University of Virginia concluded that increased body fat absorbed vitamin D, which decreased its availability in blood. While supplementing vitamin D reduces markers of inflammation, such as C-reactive protein, reducing body fat through diet and exercise might increase vitamin D levels and decrease inflammation. (*Inflammation Research*, 64: 565-575, 2015)»

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EXERCISE BETTER THAN DIETING for Improving Metabolic Health

■ Most studies show that effective weight loss requires cutting calories as well as exercising more. However, calorie cutting alone does little to improve metabolic health. Researchers from Changi General Hospital in Singapore compared weight loss and metabolic health in people attempting to lose weight through diet or exercise alone during a 24-week weight-loss study. Patients in both groups lost nearly eight pounds, but markers of inflammation and blood sugar regulation improved more in the exercise group. Exercise is the most important way of improving metabolic health. Trying to lose weight through caloric restriction alone is counterproductive for long-term health, appearance and longevity. (International Journal Sports Nutrition Exercise Metabolism, Published Online May 22, 2015)

Hot Tub Therapy Protects Against Insulin Resistance



■ Sitting in a hot tub after a monster workout is one of life's great pleasures. Pain from sore muscles and joints seems to melt away. A review of literature by scientists from the Federal University of Rio Grande do Sul in Brazil found that heat therapy from a sauna or hot tub could help fight metabolic and cardiovascular disease. **Heat therapy reduces fasting blood sugar, glycated hemoglobin (a measure of long-term blood sugar control) and body fat.** It also increases nitric oxide secretion, which is an important chemical regulating blood flow. Heat therapy increases heat shock protein 70, which improves insulin sensitivity, prevents fat accumulation and suppresses inflammation. Sitting in a hot tub has measurable beneficial effects on health. (Current Opinion Clinical Nutrition Metabolic Care, 18: 374-380, 2015)

ENERGY EXPENDITURE DURING EXTREME CALORIC RESTRICTION

■ Ninety-five percent of people who lose weight gain it back again within one year. One reason is that extreme caloric restriction slows metabolism and reduces caloric expenditure. Researchers from the University of Chile found that overweight women on calorie-restricted diets (20 calories per kilogram of bodyweight per day) reduced resting energy expenditure by 168 calories per day (10.6%).

Resting energy expenditure was higher in women with more muscle mass. The study showed that the body adapts to caloric restriction by reducing energy expenditure, which makes it extremely difficult to maintain lost weight. (Nutricion Hospitalaria, 31:2428-2436, 2015)

ARE COMMERCIAL WEIGHT-LOSS PROGRAMS WORTH THE MONEY?

■ Weight Watchers, Nutrisystems and Jenny Craig are the principal commercial weight-loss companies. Monthly costs are \$43, \$570 and \$280, respectively. Weight-loss programs such as HMR and Optifast cost even more. Are they worth the money? A meta-analysis of 45 studies comparing the effectiveness of commercial weight-loss programs after 12 months showed that weight loss was approximately 4.9 percent of bodyweight for Jenny Craig, 2.6 percent for Weight Watchers and 3.8 percent for Nutrisystems. Optifast, a very low-calorie program, achieved a 4 percent weight loss at three months. The Atkins diet achieved one to 2.9 percent, depending upon the study. Given the cost, the effectiveness of these programs is extremely limited. (Annals Internal Medicine, 162: 501-512, 2015) ■



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PALEO DIET IMPROVES BLOOD FATS



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■ The Paleolithic or Caveman Diet is based on consuming berries, nuts, lean grass-fed meats and fish. Proponents of the diet claim that human genes evolved over thousands of years to optimize metabolism from eating these natural foods. Industrialization changed the human diet suddenly to include the consumption of grains and calorie-dense, high fat, processed foods. Food choices also increased dramatically, which promoted overeating and overconsumption of unhealthy foods. **Researchers from Eastern Michigan University found that middle-aged adults consuming a Paleolithic diet low in grains experienced substantial decreases in total cholesterol, LDL cholesterol, triglycerides and increased HDL (the good cholesterol).** These changes occurred after they had first consumed a traditional cholesterol-lowering diet. Critics of the Paleolithic diet point out that the diets of ancient humans varied greatly from one place to another, so that it is unlikely that metabolically linked genes adapted uniformly. (Nutrition Research, 35: 474-479, 2015)

OMEGA-3

POLYUNSATURATED FATTY ACIDS

Decrease Blood Triglyceride Levels

■ Having increased blood triglycerides is a significant risk factor of heart attack and stroke. Regular physical activity reduces triglyceride levels in most people. However, less than half of population meets the minimum recommendation of 150 minutes per week of moderate intensity exercise. Consumption of omega-3 fatty acid supplements might help inactive people control blood fat

levels. A literature review of 1,341 studies by researchers from the University of Guelph in Canada found that the **consumption of more than 4 grams per day of omega-3 fatty acids reduced triglyceride levels between 4 and 51 percent.** Omega-3 fatty acids may be an important heart-healthy food that could reduce the risk of heart attack and stroke. (Lipids in Health and Disease, 14(1): 53, 2015)



CAPSAICIN PROTECTS LIVER CELLS

■ Capsaicin, the chemical that makes chili peppers hot, promotes weight loss and reduces fat deposition by increasing key proteins in fat cells. It might also protect liver cells from fibrosis. A study from Belgium on mice found that supplementing their diets with capsaicin prevented liver cell fibrosis following closure of their bile ducts. Capsaicin supplements might protect liver function. (Molecular Nutrition & Food Research, 59: 1107-1116, 2015) »

OLIVE OIL BASICS

■ Olive oil is the basis for the Mediterranean diet, which is linked to increased longevity, decreased obesity and a reduced risk of heart disease. Nancy Jenkins summarized essential knowledge about olive oil to help you get maximum enjoyment from this wonderful food. Buy olive oil in dark glass containers or tins that have been protected from the sun. The best olive oil is usually the most expensive and high-end labels usually contain the best quality oils. Fresh olive oil is best, so try to use it within 18 months of bottling. It's OK to heat olive oil above 250 degrees and use the oil for baking because olive oil is more stable than other oils. The health benefits come from their antioxidant polyphenols. Olive oil is a heart-healthy food that adds flavor to many dishes. Try to buy only the best. (The Wall Street Journal, May 15, 2015)





GRAPEFRUIT AND ORANGE JUICE CONSUMPTION INCREASE THE RISK OF MELANOMA

■ People who drink large quantities of grapefruit juice or orange juice have an increased risk of malignant melanoma—according to researchers from Brown University in Rhode Island. These citrus fruits contain chemicals called psoralens that increase the skin's sensitivity to UV light exposure. These juices are high in potassium, folate, thiamine and vitamin C, so they are important parts of a healthy diet. If you like to consume these juices, use sunscreen, wear a hat and cover vulnerable areas. Each year, physicians in the United States diagnose 76,000 new cases of melanoma and report more than 9,700 deaths. The 10-year survival rate of untreated melanoma is approximately zero. (Journal of Clinical Oncology, published online June 29, 2015)

SHOULD YOU EAT EGGS?

■ Classic scientific studies, such as the Framingham and Seven Countries studies, showed that elevated blood cholesterol was linked to heart attack and stroke. Eggs are unusually high in cholesterol, so they were blamed for a good portion of the heart disease in America. Frank Sacks from Harvard University said that saturated fat in foods was more important than cholesterol for boosting blood cholesterol and that eggs were unfairly blamed for the high rate of heart disease in America. While eggs are experiencing a nutritional renaissance, other studies show that eggs are not a risk-free food. **People with diabetes who ate one egg a day increased their risk of heart disease by 44 percent compared to people who only ate one egg per week.** Egg eaters are also more likely to get prostate cancer. Most mainstream nutritionists recommend that people follow healthy dietary patterns that include increased consumption of fruits, vegetables, whole grains, low-fat dairy, seafood, beans and nuts. People should also consume alcohol moderately, reduce intake of red and processed meats, and reduce consumption of high sugar foods. Eggs can be part of a healthy diet. (Nutrition Action Health Letter, June 2015)



HIGHER PROTEIN INTAKE LINKED TO **MORE MUSCLE**

■ The Framingham Study examined public health issues, such as heart disease and arthritis, in people living in Framingham, Massachusetts. Muscle loss in older adults, a condition called sarcopenia, is a serious public health issue because it increases the risk of falls, diabetes and decreases the quality of life.

A sample of more than 2,500 men and women, aged 29 to 86, found a high relationship between protein intake and leg strength and muscle mass. Many recent studies in older adults show that high protein intake stimulates muscle protein synthesis, even in the absence of exercise. The study shows the importance of maintaining adequate protein intake throughout life. (Journal of Nutrition, 145: 1569-1575, 2015)

Chemical in Salmon **IMPROVES METABOLIC HEALTH**

■ The metabolic syndrome is characterized by insulin resistance, high blood pressure, abdominal fat deposition, abnormal blood fats and inflammation. Contributing factors include physical inactivity, poor diet and genetics. Geneviève Chevrier from Laval University in Canada, and co-workers, in a study on mice, found that chemicals in salmon improved the symptoms of the metabolic syndrome by improving blood sugar metabolism, decreasing inflammation and lowering blood triglycerides (fat). Salmon is a heart-healthy food that promotes metabolic health. (Journal of Nutrition, 145: 1415-1422, 2015) ■



● BY STEVE BLECHMAN AND THOMAS FAHEY, EdD



FDA: NSAIDs Increase the Risk of Heart Attack, Stroke and Heart Failure

■ The U.S. Food and Drug Administration (FDA) issued a warning that non-aspirin nonsteroidal anti-inflammatory drugs such as ibuprofen and naproxen increase the risk of stroke, heart attack and heart failure by 10 to 50 percent— depending upon dosage and health status. **The risk of serious cardiovascular events is higher in people with established cardiovascular disease, but even healthy people are at risk.** The FDA warning included prescription and over-the-counter NSAIDs. Other studies have shown that NSAIDs slow muscle hypertrophy. These drugs are widely used to fight pain and inflammation. Athletes should minimize the use of these drugs. (The New York Times, July 10, 2015)

LESS OBESITY & DIABETES AT HIGH ALTITUDE

■ Colorado has the lowest obesity rate in the United States. Its high altitude might be one of the reasons. A study led by Orison Woolcott from Cedars-Sinai Medical Center in Los Angeles found that people living at high altitude (1,500 meters— the altitude of Denver, Colorado) showed lower blood sugar levels and lower sugar output from the liver. David Swanson, a researcher from Cal State University, Chico, noted that obesity rates were lowest in the Colorado counties with the highest altitudes. We do not currently understand the effects of altitude on the incidence of obesity or diabetes. (Endocrine News, June 2015)



Americans Need MORE SLEEP

■ The American Thoracic Society (ATS) issued recommendations to physicians for promoting better sleep habits in their patients. Sleep is extremely important for health and the overall quality of life. Getting less than six hours of sleep per night increases the risk of various metabolic diseases and can result in premature death. Likewise, sleeping more than nine to 10 hours per night can also have negative health consequences. People should try to get seven to nine hours of good-quality sleep per night. Falling asleep at the wheel is one of the leading automobile-related causes of death. People should understand the symptoms and consequences of drowsy driving. **Sleep apnea— periodic airway collapse during sleep— is a serious health problem that can also lead to premature death.**

Obese or unusually muscular people should be screened for this health problem. Improving the sleep habits of Americans could have a major effect on the public health of the nation. (American Journal of Respiratory and Critical Care Medicine, 191: 1450-1458, 2015) »



Maternal Exposure to Acetaminophen REDUCES TESTOSTERONE PRODUCTION

■ Most common reproductive system problems in men stem from suppressing testosterone during fetal development. A study on mice, conducted by researchers from the University of Edinburgh in Scotland, showed that exposing mothers to the common pain reliever acetaminophen reduced fetal testosterone production, which could eventually lead to low sperm count and the development of testicular cancer. Acetaminophen is the most popular pain reliever in the world. If this study applies to humans, women should avoid this drug during pregnancy. (Science Translational Medicine, 7(288): 288ra80, 2015).

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WHY MORE PEOPLE GET SICK in the Winter

■ Rates of colds, flu, heart attack, stroke, autoimmune disease and psychiatric illnesses are much higher in the winter than in the summer. **Researchers from University of Cambridge in the United Kingdom found increased activity levels of genes controlling the immune system during colder times of the year.** They examined immune system activity in the United Kingdom and Gambia (located in Africa) during different seasons of the year. Inflammation, which is linked to poor metabolic health and the long-term risk of heart attack and stroke, was higher during the colder months. The cold months of the year can be dangerous for your health. (Nature Communications, published online May 12, 2015)

THE ENVIRONMENTAL WORKING GROUP BLASTS SUNSCREENS

■ The Environmental Working Group is an environmental think tank based in Washington, D.C. that attempts to protect the public from environmental toxins, promote healthy nutrition and expose questionable consumer products. Each year, they publish a report on sunscreens and their effects on preventing skin cancer and premature skin aging. They concluded that sunscreens do not prevent melanoma, the most deadly form of skin cancer. Sunscreens with a high sun protection factor (SPF) encourage people to stay out in the sun too long. Most sun-

screens contain vitamin A additives, which may speed the development of skin cancer. European sunscreens contain more UVA ray-filtering chemicals and better protect the skin than American products. Most people don't use enough sunscreen and don't apply it often enough to protect from skin damage. Some sunscreens contain chemicals that disrupt hormone regulation. You can get a copy of the report from The Environmental Working Group's website, www.ewg.org. (EWG's Guide to Sunscreen, published online May 2, 2015)



MODERATE COFFEE CONSUMPTION IS GOOD FOR HEALTH

■ Drinking coffee has been labeled as an unhealthy practice for more than 100 years. Some religions discourage coffee drinking because it's considered a vice. More than 36 high-quality medical studies found the opposite—moderate coffee consumption reduces the risk of cardiovascular disease, liver disease and diabetes, and has no effect on the risk of various kinds of cancer. Coffee reduces the risk of Parkinson's disease and prevents mental decline with age. Most importantly, coffee drinking is linked to increased longevity. Coffee is an important part of a healthy diet. (The New York Times, May 14, 2015)



Benefits of Exercise: *Nature or Nurture?*

■ People like to blame excess fat and poor athletic ability on their genes. True, genes influence physical fitness, aerobic capacity, body composition, temperature regulation and cardiovascular health. However, lifestyle can help people with less than Olympian genes achieve better health and wellness. **Finnish researchers from the University of Jyväskylä, in a study of active and sedentary identical and non-identical twins, found that physical activity overcame the effects of genetics.** The active twin showed lower levels of abdominal fat, more robust cardiovascular systems and stronger bones. Typically, identical twins with similar lifestyles show nearly identical levels of body composition and physical capacity. Regular physical activity can overcome genetic handicaps. (Twin Research and Human Genetics, published online March 11, 2015) ■

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I had to cut back on the amount of [ABT] I was using because I got tired of buying larger bras. — MR

My girlfriend asked me if I had breast implants. I told her no, that I was using [ABT]. My breast are plumping up and coming out of my bras at the top. — PW

My PMS breast pain and swelling was so bad that I could not stand to touch my breasts and even the shower hurt. Now after using [ABT] I have no pain. — EA

[I] have had a patient on [ABT] with amazing results! She is 40 with three children and a 120 lb weight gain from the last child. After losing that weight, she had drooping ... [with] her breasts. [After 3-4 months of ABT] she has increased firmness [and] size... I AM AMAZED! - JS, Clinical Pharmacologist

I suffered from post child/weightloss boobs ... I am ordering round 2 of treatment and am completely satisfied as is my husband. It is nice to have firm/lifted breasts.... a great alternative to surgical breast enhancement! — SD, Personal Trainer

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● BY STEVE BLECHMAN AND THOMAS FAHEY, EdD

CAPSAICIN PROMOTES METABOLIC HEALTH



■ Capsaicin is a chemical found in red chili pepper used to make paprika, which is an ingredient in chili and Mexican food. It reduces appetite and calorie intake and helps promote weight loss by releasing serotonin, a hunger-suppressing hormone. A review of literature by Mark McCarty from Catalytic Longevity in California, and colleagues, concluded that capsaicin has favorable effects on atherosclerosis, metabolic syndrome, diabetes, fatty liver disease, heart enlargement, high blood pressure and the risk of stroke. It also has favorable effects on the endothelium— the inner lining of the blood vessels. Capsaicin is a heart-healthy supplement that promotes metabolic health (Open Heart, 2: E000262, 2015)

BEETROOT JUICE IMPROVES KAYAK PERFORMANCE

■ Beetroot is high in nitrates that stimulate the inner lining of blood vessels to secrete nitric oxide, a chemical that controls blood flow. Researchers from the University of Western Australia found that a single dose of beetroot juice improved exercise performance in a 500-meter kayak time trial, and during an exercise test performed in the laboratory on a kayak ergometer. Beetroot also improved paddling efficiency. Beetroot is an effective performance-enhancing supplement that would be helpful for endurance athletes during practice or competition.

(International Journal Sports Nutrition Exercise Metabolism, 25: 278-284, 2015)



KRILL OIL SUPPLEMENTS IMPAIR BLOOD SUGAR REGULATION

■ Krill oil is a popular supplement that is high in the omega-3 fatty acids EPA and DHA, which are widely considered heart healthy and good for metabolic health. However, a study led by Benjamin Alpert from the University of Auckland in New Zealand showed that krill oil supplementation had a negative effect on metabolic health in overweight men. Test subjects received five grams per day of krill oil or placebo (fake krill oil) for eight weeks.

The group taking krill oil experienced a 27 percent decrease in insulin sensitivity, which would increase the risk of diabetes and heart disease. Blood sugar control is one of the most important markers of metabolic health. Krill oil decreases insulin sensitivity and impairs metabolic health. (American Journal of Clinical Nutrition, 102: 49-57, 2015)



Caffeine BOOSTS Endurance

■ For more than 40 years, endurance athletes have been taking caffeine to improve endurance performance. Scientists thought that caffeine worked by increasing blood fats, which spared carbohydrates in the blood, muscles and liver. A study by Brazilian athletes concluded that caffeine improves endurance performance by sparing carbohydrates and increasing fat use. They supplemented six milligrams of caffeine per kilogram of bodyweight and measured endurance performance on a stationary bicycle while the test subjects were at maximal lactate steady-state— the maximum exercise intensity where lactate no longer increases. **Caffeine increased endurance performance by 22.7 percent.** Caffeine is a very effective supplement that improves performance during endurance and high-intensity events. Currently, caffeine is not restricted in Olympic sports but is regulated by the National Collegiate Athletic Association. (Nutrients, 7:5254-5264, 2015) »

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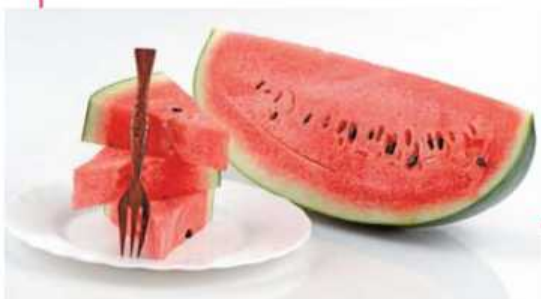
■ A French study on old rats led by Christophe Moinard from the University Paris Descartes showed that supplementing citrulline reduced abdominal fat levels and protected against age-related cell destruction. Citrulline is an amino acid that is converted to arginine, which increases levels of nitric oxide— an important chemical that regulates blood flow throughout the body.

Citrulline also increases brown fat activity, which increases caloric expenditure and promotes fat burning. It does this without stimulating the sympathetic nervous system, which avoids increases in heart rate, blood pressure and anxiety. Citrulline increased levels of hormone-sensitive lipase by 150 percent, which promoted fat mobilization and use. Citrulline is an underappreciated supplement that improves fat burning and muscle blood flow. (*Journal of Nutrition*, 145:1429-1437, 2015)

L-CITRULLINE **IMPROVES** PERFORMANCE

■ Citrulline is an important amino acid involved in the formation of urea. It is a popular component in athletic food supplements because it participates in key amino acid reactions and influences blood flow by increasing nitric oxide levels.

Nitric oxide is an important chemical secreted by the endothelium— the inner lining of the blood vessels. Stephen Bailey and colleagues from Exeter University in the United Kingdom found that citrulline supplements (six grams per day) improved resting blood pressure, accelerated oxygen uptake during exercise, improved endurance performance and enhanced tolerance to high-intensity exercise in healthy adults. Watermelon rind is an excellent source of citrulline. (*Journal Applied Physiology*, published online May 28, 2015)



HIGH IRON LEVELS IN BRAIN LINKED TO ALZHEIMER'S DISEASE

■ Iron is an essential component of hemoglobin, which carries oxygen in blood. Many athletes take supplemental iron because they think it will boost oxygen transport capacity and endurance. This might be a mistake. **High blood levels of iron have been linked to heart attack and stroke.** A study led by Scott Ayton from the University of Melbourne in Australia found that high ferritin iron levels in cerebrospinal fluid (brain fluid; CSF) were linked to the development of Alzheimer's disease. People with a gene variant called APOE-e4 were particularly sensitive to increases in CSF iron. While iron deficiency is common in female athletes, most male and female athletes should avoid iron supplements unless recommended by a physician. High iron levels have been associated with cancer and heart disease. (*Nature Communications*, 6: article number 6760, May 19, 2015)

OMEGA-3 FATTY ACIDS IMPROVE PERFORMANCE

■ Polish researchers found that omega-3 supplements improved endurance capacity in cyclists by increasing concentrations of nitric oxide by eight micromoles per liter, and boosted muscle blood flow by more than 5 percent compared to a placebo (fake omega-3s). This study agrees with several investigations from the University of Tokyo, which found that supplementing omega-3-rich fatty acids boosted exercise efficiency. Subjects took a daily dose of 3.6 grams per day of the omega-3s EPA and DHA. Omega-3 fatty acids— found in fish oil supplements, fish, walnuts, soybeans, beef and shrimp— promote blood vessel health and reduce the risk of heart attack and stroke. (*Nutraingredients.com*, May 6, 2015) ■



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BEAUTY QUESTION OF THE MONTH

with Dr. Jennifer Haley

How do you get rid of under eye circles?

Dark under eye circles are a common concern among women of all ages, often causing a tired and less youthful appearance. There are many different causes of under eye circles, and treatments are chosen based on the particular cause in each individual.

Swelling and puffiness. Under eye puffiness can appear as dark bags and is usually worse in the morning. Minimizing salt and alcohol intake, which lead to water retention, may help. I recommend sleeping on your back with an extra pillow to prevent fluid from draining toward the eyes overnight. Another remedy is to use already steeped, refrigerated green tea bags first thing in morning to help reduce any fluid build-up. For persistent eye bags, I recommend Obagi Medical Neotensil. This works by recontouring and smoothing out any bulges under the eyes. It is applied daily and stays in place up to 16 hours.

Excessive pigmentation. Darkening of the skin may be hereditary. Other causes of skin pigmentation include UV rays from the sun or from rubbing the area due to chronic allergies. Lightening creams or lasers may be used for treatment. A daily SPF is crucial. I recommend an SPF 30-plus with zinc oxide before leaving the house. I like EltaMD Physical, SkinCeuticals Sheer Physical UV Defense or PCA Skin Perfecting Protection. Large sunglasses will also protect this area from sun-induced darkening. Allergies may cause puffy skin, broken blood vessels or

friction-induced darkening under the eyes from chronic rubbing. Oral antihistamines such as Zyrtec, Allegra or Claritin can control the allergies and reduce darkening. Quercetin or grape seed extract are great natural compounds that can ease allergy symptoms.

Prominent vessels. If you press on the discolored area and the darkness improves, blood vessels are likely the culprit. Thin skin in combination with prominent blood vessels can cause dark under eye circles. If the skin is thin or the vessels are prominent, anything that enhances blood flow to the area, including physical or mental stress, will make the under eye circles look worse. Lasers can successfully lessen the vessels causing the darkening to the lower lids. Protecting the eyes in this procedure and going to the most experienced physician cannot be emphasized enough. Also, the thicker your skin, the less visible the blood vessels will be, so using eye creams that thicken the skin will be helpful.

Loss of volume to the area and thinning of the skin (hollowing). Hyaluronic acid dermal fillers may be used to plump these hollow areas that cast shadows under the eyes. Also, using an eye cream with retinol, caffeine, peptides and antioxidants can help fade pigment, build collagen and constrict blood vessels to make dark circles less noticeable. I like RoC Retinol Correxion

eye cream, Teamine cream, SkinCeuticals AOX+ Eye Gel and Replenix Retinol Eye Repair Cream.

I hope this helps give you an idea of where you can get started on your own in treating your under eye circles with some simple measures using the right eye cream and sun protection. If you are not satisfied with your results after about three months, I recommend a board-certified dermatologist through www.aad.org who can treat you in the office.

Have a skin-related question for Dr. Haley? Email your question to editor@fitnessrxwomen.com and you could see it answered in the next issue!

Dr. Jennifer Haley is a board-certified dermatologist with a degree in Nutrition Science from Cornell University. She has been an NPC bikini competitor, consultant to the US Capitol, and is the co-founder of the skin care line, Derivations— which offers complimentary skin consultations. She enjoys an active lifestyle in Scottsdale, AZ and Montrose, CO with her husband and three boys. »



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not been evaluated by the Food and Drug
Administration. This product is not intended to
diagnose, treat, cure or prevent any disease.



Natural LIP JAM

■ Check out this easy natural lip jam recipe from the book *Inspired* by Lorna Jane Clarkson, who is the founder of Australian active wear mega-brand, Lorna Jane. Today, she represents more than just active wear, inspiring women to live their best lives through her theory of "Active Living" which she delivers to millions via her lifestyle website, www.movenourishbelieve.com. For more natural beauty recipes as well as tips on defining your own personal style, advice for living an inspirational life, nutritious recipes and more, check out *Inspired* in Lorna Jane stores throughout the U.S. and Australia, as well as online at www.LornaJane.com.

Prep Time: 5 minutes. Makes 1/4 cup

You will need:

- 2 tablespoons honey
- 2 tablespoons coconut oil (melted)
- 1 teaspoon cranberry or berry powder
- 2 drops vitamin E oil
- 2 drops rose water

This is how we do it:

Combine all ingredients in a small glass jar. Let cool and apply to lips for a non-toxic lip gloss alternative.



Photo: Lorna Jane

BIZARRE BEAUTY

■ It seems that odd beauty trends pop up all the time these days. Here a few recent bizarre beauty treatments that have recently come about, as reported in *The Telegraph*:

- **Hair burning:** Brazilian supermodel Alessandra Ambrosio recently posted an Instagram picture of this treatment called Velaterapia, a Brazilian therapy meant to get rid of split ends.

- **Cryotherapy:** Meant to raise metabolism and encourage weight loss, this involves entering a 100-degree cold chamber full of dry liquid nitrogen or dunking into a cold barrel. Stars such as Lindsay Lohan have reportedly tried it.

- **Fire facials:** This is a treatment being done in China— fire is used to stimulate skin and is meant to prevent wrinkles from developing. A towel, drenched in a special elixir and alcohol, is spread over the face. Yikes!

("Bizarre beauty treatments: the weirdest ways to look 'good'", *The Telegraph*, www.telegraph.co.uk)

SKIN REJUVENATION VIA PULSED ELECTRICAL FIELDS

■ Technological advances are making way for lots of new acne and skin treatments. According to ScienceDaily, many therapies aimed at skin rejuvenation affect all exposed tissue and can change the structure and function of the skin. But a new approach involving pulsed electrical fields may be less likely to have such unintended side effects like scarring and altered pigmentation when it comes to skin rejuvenation. Developed at Massachusetts General Hospital, this new approach is noninvasive and does not involve the generation of heat. In a study, it was found that within periods up to two months after treatment, there were changes in skin thickness, blood supply and collagen density, resulting in young and healthy skin. Researchers will next investigate how the treatment affects aged and damaged skin. ("Pulsed electrical fields may provide improved skin rejuvenation," ScienceDaily, www.sciencedaily.com)

Hair Dye and INCREASED TESTOSTERONE?

■ Japanese researchers have found that women who dye their hair for more than 10 years may have higher levels of testosterone, according to reports. A study published in the *European Journal of Public Health* involved more than 400 women, ages 20 to 54. It was found that testosterone levels were 14 percent higher in those who had used permanent or non-permanent hair dyes for 10 years or more than in women who had never dyed their hair. According to reports, it's not clear why this is occurring, but research shows that chemicals in hair dyes may alter hormones. ("Hair dye can elevate testosterone – study," Independent Online, www.idl.co.za) ■

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Viviscal® Healthy Hair is a 100% drug free dietary supplement. Scientifically formulated with the exclusive marine complex **AminoMar®** plus nutrients such as Biotin, Vitamin C and Zinc, Viviscal Healthy Hair is clinically proven to nourish thinning hair from within for thicker, fuller hair.

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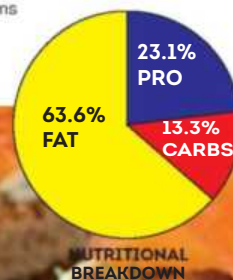


SMOKED SALMON CANAPÉS

Following a low-carb diet to stay slim? Treat your party guests to these classic and elegant apps.

Totals Per Serving

Calories: 128.7
Protein: 7.6 grams
Carbohydrate: 4.4 grams
Fat: 9.3 grams
Cholesterol: 30.7 mg
Sodium: 193.6 mg



INGREDIENTS:

- 8 OUNCES CREAM CHEESE, SOFTENED
- ½ CUP PLUS 2 TABLESPOONS CHOPPED FRESH DILL
- 1 TEASPOON LEMON JUICE
- 8 SLICES WHOLE WHEAT, WHITE OR GLUTEN-FREE BREAD, TOASTED AND CRUSTS REMOVED
- 8 OUNCES SMOKED SALMON, PRE-SLICED
- 32 CAPERS, DRAINED FROM LIQUID

Process cream cheese in a food processor or blender. Pulse until the cream cheese is whipped, about 20 seconds. Add ¼ cup chopped dill and lemon juice. Pulse until well incorporated, scraping down the sides if necessary. Spread mixture on toast and top with smoked salmon. Cut each piece on the bias (diagonally) with a serrated knife. Garnish each canapé with capers and dill. Makes 16 canapés.

NUTRITIONAL PROFILE (PER SERVING)

MACRONUTRIENTS		VITAMINS	
KCAL:	128.780	A (RE):	77.935
PRO g:	7.672	C mg:	0.948
CHO g:	4.413	THIAMIN mg:	0.042
CHOL mg:	0.000	RIBOFLAVIN mg:	0.071
FAT Total g:	9.369	NIACIN mg:	2.028
SATURATED FAT g:	3.797	PYRIDOXINE (B6) mg:	0.012
MONOUNSATURATED FAT	3.665	FOLATE mcg:	10.228
POLYUNSATURATED FAT	0.359	COBALAMIN µg:	0.035
TRANS FATTY ACID g:	0.004	MINERALS	
DIETARY FIBER, TOTAL g:	0.985	SODIUM mg:	193.638
SUGAR, TOTAL g:	0.825	POTASSIUM mg:	135.452
		CALCIUM mg:	31.976
		IRON mg:	0.967

SWEET CHILI ORANGE CHICKEN

Turn your grill area into a Mexican cantina by serving this low-carb sweet-'n'-spicy entrée with your favorite margarita recipe.

NUTRITIONAL PROFILE (PER SERVING)

MACRONUTRIENTS		VITAMINS	
KCAL:	293.086	A (RE):	79.673
PRO g:	34.518	C mg:	9.948
CHO g:	7.392	THIAMIN mg:	0.103
CHOL mg:	95.255	RIBOFLAVIN mg:	0.169
FAT Total g:	13.260	NIACIN mg:	14.886
SATURATED FAT g:	2.959	PYRIDOXINE (B6) mg:	0.671
MONOUNSATURATED FAT g:	5.908	FOLATE mcg:	10.278
POLYUNSATURATED FAT g:	2.263	COBALAMIN µg:	0.363
TRANS FATTY ACID g:	0.000		
DIETARY FIBER, TOTAL g:	0.335	MINERALS	
SUGAR, TOTAL g:	4.860	SODIUM mg:	375.714
		POTASSIUM mg:	383.091
		CALCIUM mg:	35.630
		IRON mg:	2.019

INGREDIENTS:

4 BONELESS CHICKEN BREAST HALVES, SKIN ON (SKIN CAN BE REMOVED AFTER COOKING IF DESIRED, BUT WILL KEEP THE CHICKEN MOIST IF LEFT ON DURING GRILLING)

1 CUP FRESH ORANGE JUICE

1 TABLESPOON LIME JUICE

1 TABLESPOON LEMON JUICE

1 DRIED CHIPOTLE CHILI PEPPER, SEEDS AND STEM REMOVED

1 CUP RED SALSA

2 TABLESPOONS OLIVE OIL

1 TABLESPOON HONEY

1 TEASPOON SALT

Totals Per Serving

Calories: 293

Protein: 34.5 grams

Carbohydrate: 7.3 grams

Fat: 13.2 grams

Cholesterol: 95.2 mg

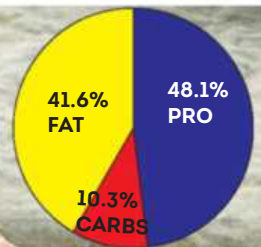
Sodium: 375.7 mg

In a small saucepan combine the orange, lemon and lime juices with the chili pepper and bring to a boil. Reduce heat and simmer uncovered for about 5 minutes. Remove from the heat and let cool. Transfer to a blender or food processor along with the salsa, olive oil, honey and salt. Process until smooth. Pour marinade over chicken breasts in a shallow baking dish, cover and refrigerate for 4 to 6 hours.

Drain the chicken from the marinade and start grilling the breasts with the skin side toward the flame. (Upward in the broiler or downward on the grill). Turn as needed to avoid burning. Keep cooking until the chicken is no longer pink in the center, 14 to 20 minutes.

Serve with slices of citrus and cilantro leaves. Makes 4 servings.

NUTRITIONAL BREAKDOWN



FRESH CORN SALSA

Enjoy this easy-breezy fresh salad combined with colorful vegetables and spices.

INGREDIENTS:

2 CUPS FRESH CORN KERNELS, CUT OFF THE COB (ABOUT 3 COBS)
 2 SCALLIONS CHOPPED, USING ABOUT 1 INCH OF THE GREEN
 4 CUPS DICED TOMATOES, 1/4 INCH DICE, ABOUT 4 LARGE TOMATOES
 1 SMALL WHITE ONION, FINELY DICED
 1/4 CUP FINELY DICED RED BELL PEPPER
 1 MEDIUM JALAPENO PEPPER SEEDED AND MINCED
 1/2 TEASPOON MINCED FRESH GARLIC
 1 TABLESPOON EXTRA VIRGIN OLIVE OIL
 1 TABLESPOON CHAMPAGNE VINEGAR, OR ANY WINE VINEGAR
 2 TABLESPOONS CHOPPED FRESH CILANTRO
 1/2 TEASPOON FRESHLY GROUND BLACK PEPPER
 1/2 TEASPOON SALT
 1/8 TEASPOON CRUSHED RED PEPPER FLAKES
 1 TEASPOON SPICE MIX LIKE Mrs. DASH SEASONING
 1/2 CUP TOMATO JUICE

Boil the corn on the cob for approximately 4 minutes. Drain and cool before cutting off kernels. Combine all the ingredients in a large non-reactive bowl. Cover and refrigerate for at least three hours. Makes 8 servings.

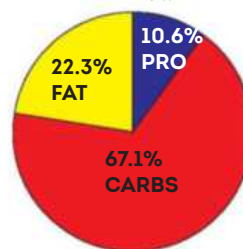
Totals Per Serving

Calories: 89
 Protein: 2.4 grams
 Carbohydrate: 15.2 grams
 Fat: 2.2 grams
 Cholesterol: 0 mg
 Sodium: 136.6 mg

NUTRITIONAL PROFILE (PER SERVING)

MACRONUTRIENTS		VITAMINS	
KCAL:	89.090	A (RE):	75.561
PRO g:	2.411	C mg:	25.307
CHO g:	15.214	THIAMIN mg:	0.038
CHOL mg:	0.000	RIBOFLAVIN mg:	0.027
FAT Total g:	2.249	NIACIN mg:	0.522
SATURATED FAT g:	0.266	PYRIDOXINE (B6) mg:	0.112
MONOUNSATURATED FAT g:	1.256	FOLATE mcg:	17.345
POLYUNSATURATED FAT g:	0.248	COBALAMIN µg:	0.000
TRANS FATTY ACID g:	0.000	MINERALS	
DIETARY FIBER, TOTAL g:	2.075	SODIUM mg:	136.688
SUGAR, TOTAL g:	4.131	POTASSIUM mg:	211.044
		CALCIUM mg:	14.577
		IRON mg:	0.339

NUTRITIONAL BREAKDOWN



STRAWBERRIES WITH BALSAMIC VINEGAR SAUCE

Enjoy this simple-yet-exciting fruit dessert that incorporates acid and sweet to create a piquant low-calorie, low-fat dessert.

INGREDIENTS:

- 4 CUPS SLICED STRAWBERRIES
- 3 TABLESPOONS GOOD QUALITY BALSAMIC VINEGAR (THE THICKER AND MORE SYRUPY THE BETTER)
- 1 TABLESPOON ORGANIC HONEY
- 1/8 TEASPOON FRESHLY GROUND BLACK PEPPER
- FRESH BASIL LEAVES FOR GARNISH

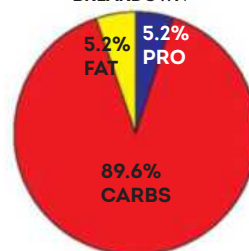
Totals Per Serving

Calories: 69.6
 Protein: 0.9 grams
 Carbohydrate: 16.9 grams
 Fat: 0.4 grams
 Cholesterol: 0 mg
 Sodium: 1.6 mg

NUTRITIONAL PROFILE (PER SERVING)

MACRONUTRIENTS		VITAMINS	
KCAL:	69.698	A (RE):	1.747
PRO g:	0.987	C mg:	84.698
CHO g:	16.925	THIAMIN mg:	0.035
CHOL mg:	0.000	RIBOFLAVIN mg:	0.034
FAT Total g:	0.434	NIACIN mg:	0.563
SATURATED FAT g:	0.022	PYRIDOXINE (B6) mg:	0.069
MONOUNSATURATED FAT g:	0.062	FOLATE mcg:	34.676
POLYUNSATURATED FAT g:	0.224	COBALAMIN µg:	0.000
TRANS FATTY ACID g:	0.000		
DIETARY FIBER, TOTAL g:	2.906	MINERALS	
SUGAR, TOTAL g:	12.853	SODIUM mg:	1.663
		POTASSIUM mg:	223.887
		CALCIUM mg:	23.634
		IRON mg:	0.619

NUTRITIONAL BREAKDOWN



Place the strawberries in a medium non-reactive bowl. In a small bowl, combine the balsamic vinegar, honey and pepper. Stir until combined. Drizzle the balsamic sauce over the strawberries and toss to mix. Cover and chill. Toss again before serving and garnish with basil leaves.

Serve by itself or as a topping for frozen yogurt, vanilla ice cream or a dairy-free frozen dessert. Makes 4 servings.



THE

FLAT

ABS

BELLY

BURN

WORKOUT

AND

DIET

IF YOU REALLY WANT TO ACHIEVE FLAT ABS, THEN YOU'LL NEED THE ULTIMATE TRAINING AND NUTRITION PROGRAM— AND THAT'S EXACTLY WHAT YOU'LL FIND RIGHT HERE! WITH THE HELP OF OUR COVER MODEL, IFBB BIKINI PRO JUSTINE MUNRO, WE ARE BRINGING YOU AN EFFECTIVE FLAT ABS WORKOUT THAT ENGAGES ALL ASPECTS OF THE CORE FOR OPTIMAL RESULTS. IN ADDITION, OUR FLAT ABS BELLY BURN DIET WITH RECIPES AND TWO-WEEK MEAL PLAN WILL REALLY HELP YOU BURN FAT AND GET HEALTHY. GIVE THIS ENTIRE PROGRAM A TRY TO START SCULPTING THOSE ABS!



BY LISA STEUER
PHOTOGRAPHY BY MICHAEL NEVEUX

The Workout

EXERCISE

PERFORM 5 SETS OF 10-12 REPS OF EACH EXERCISE AND REST ONE TO TWO MINUTES IN BETWEEN.

BOTTOM UPS

PLATE AB TUCKS

MEDICINE BALL V-UP WITH RUSSIAN TWIST

HIP DROPS

KETTLEBELL FIGURE EIGHT

BUTT-UPS (PLANKS)

BALL SLAMS

ONE-HANDED MED BALL SLAM

BANDED TWISTS FOR OBLIQUES

HANGING LEG OBLIQUE RAISES



Butt-UPS (planks)

Styling by TRISH STELLA • Hair, Make-up and styling by TERI GROVES
Clothing: FOREVER 21 • Footwear: Nike

Get It Right

Directions and tips for completing the exercises in this workout.

1) BOTTOMS UP: Lie flat on the ground, legs should be straight and your arms to the side. Once in this position, tuck knees toward your chest. At the same time, extend your legs directly above you. Rotate and elevate your pelvis to raise your glutes from the floor. Hold for one to two seconds and slowly come back to starting position.

2) PLATE AB TUCKS: Begin in push-up position. Place feet on your desired plate weight. Once in position and keeping a stable upper body and flat back, slowly contract your lower abs and draw your knees into your chest. Hold contraction for one to two seconds and slowly bring your legs back to the starting position.

3) MEDICINE BALL V-UP WITH RUSSIAN TWIST:

Lie flat on your back on the ground with a medicine ball. Legs should be straight and your arms extended overhead, holding medicine ball above your head. Simultaneously raise your torso and legs up to a V-shape and try to touch the medicine ball to your feet. Pause for a moment, then lower legs to about a few inches off the floor, and twist back and forth. Slowly return to starting position.

4) HIP DROPS: Start in a push-up position with elbows on ground, resting on your forearms. Slowly drop one hip until slightly above the ground and back up, then do the same with the opposite side and repeat.

5) KETTLEBELL FIGURE EIGHT: Hold a kettlebell between your legs and stand wider than shoulder width. Bend over and while pushing butt out, keeping core tight as well as your back flat. Once in this position, pass the kettlebell to the opposite hand underneath.



Bottoms UP



Plate Ab TUCKS



Medicine Ball V-Ups
with RUSSIAN TWIST



Hip DROPS



kettlebell FIGURE
EIGHT

6) BUTT-UPS (planks): Begin in a push-up position with elbows on ground, resting on your forearms. As you exhale, raise your glutes toward the ceiling, putting yourself in a pike position, squeezing abs tight. Lower back slowly down to the starting position, inhaling on the way down. Repeat!

7) BALL SLAMS: Stand with your feet shoulder-width apart, knees slightly bent and a wall ball held overhead. Throw the ball down to the ground in front of your feet with as much force and power as possible. Exhale during this movement and contract the abs. Catch the ball as it bounces from the floor, and quickly bring ball back up overhead and repeat as many times as you can. This exercise is great for developing power, speed, strength and coordination!

8) ONE-HANDED MEDICINE BALL SLAMS: This exercise is exactly like the ball slam just with one hand adding more instability and difficulty to keep yourself balanced. Stand with your feet shoulder-width apart, knees slightly bent and a wall ball held overhead with one hand. Throw the ball down with as much force and power as you can. Grab with both hands to bring back up and repeat again with same hand.

9) BANDED TWISTS FOR OBLIQUES: Tie a band to a sturdy base or pole. Start by standing perpendicular to the pole/base. With band in hands, step away for desired resistance. Lock out arms and rotate 180 degrees with your feet acting as your base and staying perpendicular to the pole/base to perform one rep. Remember to keep arms straight and to keep a tight/controlled motion.

10) HANGING LEG OBLIQUE RAISES: Grab onto a pull up bar with a shoulder width pronated grip, making sure arms are completely straight and feet are off the ground. Keep core tight and use your abs to raise your knees toward each side of your chest while twisting your torso toward one side and crunching your obliques. Return to starting position and repeat on other side.

Ball SLAMS



One-Handed
Medicine Ball
SLAMS



Banded Twists for
OBLIQUES



Hanging Leg
OBLIQUE RAISES



BELLY BURN CARDIO

Of course, cardio is also essential when it comes to burning fat and getting a six-pack. Justine performs high-intensity interval training three to four times a week either fasted in the morning or after weight training. Give Justine's HIIT training a try:

TREADMILL OR STAIRMASTER CIRCUIT SPRINTS

Repeat eight to 10 times:

40-second sprint

Two minutes rest

To increase difficulty:

For treadmill: For three to four sets, increase incline to add more of a hill resistance

For StairMaster: Instead of intervals, complete 10 sets of 40 sets of the following, rest 2 minutes and repeat: One set = 10 double steps, 10 wide double steps, 10 diagonal double steps, 10 shoulder-width double steps. Don't perform at a sprinting rate—find a pace that's comfortable for you.



JUSTINE'S SUPPLEMENT STACK

- Quattro Cookies N' Creme Protein, and Chocolate Peanut Butter Addiction protein.
- Heat and Acid stacked together (one in the morning and one at night) for fat burning and increasing metabolism.
- Limitless pre-workout, brazen black cherry flavor.
- H15 amino acid supplement

All supplements from Magnum Nutraceuticals. For more information, go to hardmagnum.com.

KEEP UP WITH JUSTINE

Justine is available for online contest prep training. You can connect with her through Facebook (Justine Munro Fitness Model), Twitter (@JustineMunro) and Instagram (JustineMunro). Sponsors: Magnum Nutraceuticals, Jan Tana, SureSport, KHP DESIGNS.

THE DIET

By Shoshana Pritzker RD, CDN

In addition to training, the only way to lose belly fat for good is to improve the balance of hormones, and it's easier than it sounds. There will be no trips to the doctor, just minor tweaks to your existing routine and an updated diet plan geared toward getting your hormones back on track and turning your body in to a fat-burning machine.

When it comes to hormones and belly fat, insulin, cortisol, and other hormones are all at fault. And when hormone levels are out of balance (specifically higher levels of insulin and cortisol), belly fat accumulation is inevitable.

HOW IT WORKS

Insulin, a fat-storage hormone, spikes after a high-carb or sugar-filled meal or drink helping to regulate blood sugar levels. When hormone levels are in balance and cortisol is present, but insulin is low (like when you exercise or are on a low-carb diet), a fat-burning enzyme called hormone sensitive lipase (HSL) is released and a fat-storing enzyme called lipoprotein lipase (LPL) will be blocked creating the perfect fat-burning scenario.

On the other hand, a carbohydrate-filled diet means insulin will be flowing most of the day causing fat storage due to LPL, the fat-storing enzyme, and a reduction in HSL. Consuming high-carbohydrate and high-sugar foods that spike insulin rapidly shifts your body from fat burning to fat storage—not really what you had in mind.

HOW TO FIX IT

A low-carbohydrate diet that focuses primarily on high quality proteins and healthy fats has been found to have positive metabolic effects when used correctly. In fact, a large study published in the journal *Nutrition & Metabolism* found that participants who ate at least 10 grams of essential amino acids (EAAs) at every meal had the least amount of belly fat. To reach this number, eat animal protein including lean beef,

fish, poultry, skim milk and egg whites often.

In addition, essential fatty acids (EFAs) help you lose weight or avoid fat storage by controlling cortisol levels. Fish oil specifically helps improve insulin sensitivity, helping the body burn glucose for energy more efficiently. Stick with omega-3s (EPA and DHA) and omega-9 fatty acids by consuming more fish, olive oil and nuts.

Reducing carbohydrate intake is a great way to lose belly fat. By eliminating certain carbs that cause a rise in insulin levels, you can reduce the speed of fat storage and promote the use of fat as fuel.

Avoid refined grains and high-glycemic carbs like white flour foods, processed junk foods, sweets, sugary cereals, breads, cookies, etc. Limit intake of starches like rice, corn, wheat and potatoes. Instead, choose beans, legumes and fibrous carbs like green vegetables. Eat carbs after working out because this will help replenish glycogen stores instead of storing the carbs as fat and can also help lower cortisol. Don't eat refined carbs for breakfast or pre-workout because this will spike insulin levels and block fat-burning capabilities.

This low-carb, high-protein/high-fat meal plan is easy to follow. On days you train, utilize the post-workout meal. If you aren't training on any one particular day, you can choose to have the post-workout meal as an extra snack or leave it out. Choose one meal per week to enjoy a treat meal. This meal plan shows the treat meal on Sunday evenings, but it's up to you where you'd like to fit it in. If you move the treat meal, just put the meal you replaced in for Sunday dinner. Remember, the treat meal is not a free-for-all; it's one meal you wouldn't normally eat, like a burger and fries or a sushi dinner. Good luck!



WEEK ONE MEAL PLAN

MONDAY

Breakfast: 4 egg white omelet with sautéed peppers and onions topped with 1/4 cup guacamole and 2 tablespoons salsa.

Lunch: Avocado tuna bowl – An avocado mashed with one 5-oz can white tuna in water (drained), a splash of lemon, 1 tablespoon chopped onion and a dash of sea salt. Pair with a side of mixed greens.

Snack: 2 medium celery sticks topped with 2 tablespoons natural peanut butter.

Dinner: 4 ounces grilled chicken and 1 cup steamed broccoli topped with 1 tablespoon butter.

Post-workout: Coconut Chia Protein Pudding – 1 scoop vanilla protein powder, 2 tablespoons chia seeds, 1/4 cup light coconut milk, 1/4 cup water (if needed), 1/2 tablespoon honey. Combine in a bowl or jar. Allow to set in the fridge overnight or for at least 4 hours before serving.

Total Daily Macros
Calories: 1,448
Protein: 114 grams
Fat: 84 grams
Carbs: 70 grams
Fiber: 27 grams

TUESDAY

Breakfast: 1 cup plain nonfat Greek style yogurt with 1/2 scoop chocolate protein powder and 2 tablespoons light coconut milk mixed together, and topped with 2 tablespoons chopped macadamia nuts or almonds.

Lunch: Large salad topped with 4 ounces grilled chicken, 2 tablespoons sliced almond, all the veggies you want and 1 tablespoon of light dressing of choice.

Snack: 1 cup baked chickpeas – rinse chickpeas, toss in a splash of olive oil and season as desired, spread out on baking sheet and bake for 40-45 minutes at 400 degrees.

Dinner: 6 ounces grilled salmon + assorted grilled veggies of choice topped with 1 tablespoon butter.

Post-workout: 1 cup lentil soup topped with 1/4 cup plain nonfat Greek style yogurt.

Total Daily Macros
Calories: 1,397
Protein: 131 grams
Fat: 61 grams
Carbs: 79 grams
Fiber: 26 grams

WEDNESDAY

Breakfast: Easy Spinach, Mushroom, Bacon Frittata (SEE RECIPE).

Lunch: Mixed grilled veggie bowl topped with 4 ounces grilled chicken and 1/4 avocado.

Snack: 6 ounces plain nonfat Greek yogurt topped with 1 tablespoon shredded coconut and 1 tablespoon cashew pieces.

Dinner: 4 ounces sautéed sliced sirloin or filet of beef with peppers and onions, topped with 1/4 cup guacamole.

Post-workout: 3/4 cup hummus with baby carrots.

Total Daily Macros
Calories: 1,490
Protein: 116 grams
Fat: 78 grams
Carbs: 84 grams
Fiber: 24 grams

THURSDAY

Breakfast: Avocado Power Smoothie – 1/2 scoop vanilla whey protein powder, 1/2 ripe avocado, 1/4 cup frozen chopped spinach, 1/2 cup nonfat milk of choice, 1/2 cup plain nonfat Greek style yogurt, 1 teaspoon ground flax, ice (optional). Blend until smooth.

Lunch: 4 ounces sautéed sliced sirloin or filet of beef with peppers and onions, topped with 1/4 cup guacamole.

Snack: 2 celery stalks topped with 2 tablespoons natural peanut butter.

Dinner: Large salad topped with 4 ounces grilled chicken, 2 tablespoons sliced almonds, all the veggies you want and 1 tablespoon of light dressing of choice.

Post-workout: Chocolate PB smoothie – 1 scoop chocolate whey protein powder, 1 tablespoon natural peanut butter, 1/4 cup chickpeas, 3/4 cup unsweetened almond milk, ice. Blend until smooth.

Total Daily Macros
Calories: 1,435
Protein: 135 grams
Fat: 76 grams
Carbs: 67 grams
Fiber: 20 grams

FRIDAY

Breakfast: 2 eggs, 2 egg whites, chopped veggies of choice – fry over medium-high heat using 1 tablespoon coconut oil and season with favorite seasonings, cook until eggs are fluffy.

Lunch: 6 ounces grilled salmon, assorted grilled veggies of choice, 1 tablespoon butter.

Snack: 100-calorie pack guacamole with 1 cup sliced veggies.

Dinner: 4 ounces chicken breast sautéed with sliced veggies, 2 tablespoons cashew pieces and soy sauce. Serve with 1 cup cauliflower rice – cut 1 head cauliflower into smaller pieces; pulse cauliflower pieces in food processor until you reach a grain-like consistency, transfer to a large skillet and sauté over medium heat with 1 tablespoon of butter and a dash of sea salt for 5 to 8 minutes, or until tender.

Post-workout: Goopy Black Bean Protein Brownies (see recipe).

Total Daily Macros
Calories: 1,483
Protein: 114 grams
Fat: 78 grams
Carbs: 86 grams
Fiber: 22 grams

SATURDAY

Breakfast: 2 hard-boiled eggs, 2 hardboiled egg whites, 1/2 avocado, dice the eggs and avocado. Combine in a bowl and top with your favorite seasonings, hot sauce or fresh cilantro.

Lunch: 4 ounces chicken breast sautéed with sliced veggies, 2

tablespoons cashew pieces and soy sauce. Serve with 1 cup cauliflower rice (see Friday dinner recipe).

Snack: 1/2 cup baked chickpeas (see Tuesday snack).

Dinner: Bun-Free burger – 4 ounce 90-93% lean ground beef burger topped with 1 slice provolone cheese and 1/4 avocado wrapped in 2 large lettuce leaves. Dip in ketchup, mustard or a splash of hot sauce. Serve with corn on the cob and grilled veggies.

Post-workout: Chocolate PB smoothie (see Thursday post-workout).

Total Daily Macros
Calories: 1,516
Protein: 129 grams
Fat: 83 grams
Carbs: 67 grams
Fiber: 22 grams

SUNDAY

Breakfast: Cheesy Egg Muffins (see recipe).

Lunch: Chicken Cobb salad – Big bowl of salad topped with 4 ounces chopped grilled chicken breast, 1 tablespoon crumbled blue cheese, 1 tablespoon shredded cheddar cheese, 2 tablespoons chopped cucumber, 2 tablespoons chopped tomato, 1 tablespoon chopped onion, 1 diced hard-boiled egg, 2 tablespoons diced avocado, 2 slices bacon cooked and chopped, top with 2 tablespoons balsamic vinegar.

Snack: 2 ounces soft mozzarella cheese with 1 small sliced tomato, drizzled with balsamic vinegar and topped with 1-2 tablespoons chopped fresh cilantro.

Dinner: Treat meal of choice.

Post-workout: Goopy Black Bean Protein Brownies (see recipe).

Total Daily Macros
(without treat meal)
Calories: 1,114
Protein: 88 grams
Fat: 57 grams
Carbs: 60 grams
Fiber: 11 grams

<p>MONDAY</p> <p>Breakfast: Cheesy Egg Muffins (See Recipe).</p> <p>Lunch: Avocado tuna bowl (see Monday lunch).</p> <p>Snack: 2 medium celery sticks topped with 2 tablespoons natural peanut butter.</p> <p>Dinner: 6 jumbo grilled shrimp (wrapped in 1/2 slice bacon) served with 1 cup cauliflower rice and grilled veggies of choice.</p> <p>Post-workout: Gooney Black Bean Protein Brownies (see recipe).</p> <p>Total Daily Macros Calories: 1,481 Protein: 115 grams Fat: 88 grams Carbs: 67 grams Fiber: 21 grams</p>	<p>Fat: 80 grams Carbs: 52 grams Fiber: 16 grams</p> <p>WEDNESDAY</p> <p>Breakfast: 1 cup plain nonfat Greek style yogurt, 1/2 scoop chocolate protein powder, 2 tablespoons light coconut milk mixed together and topped with 2 tablespoons chopped macadamia nuts or almonds.</p> <p>Lunch: Cheesy Egg Muffins (leftovers).</p> <p>Snack: 100-calorie pack guacamole with 1 cup sliced veggies.</p> <p>Dinner: Chicken Cobb salad (see Sunday lunch).</p> <p>Post-workout: 1 cup lentil soup topped with 1/4 cup plain nonfat Greek-style yogurt.</p> <p>Total Daily Macros Calories: 1,443 Protein: 117 grams Fat: 76 grams Carbs: 76 grams Fiber: 18 grams</p>	<p>with 4 ounces grilled chicken, 1/4 cup diced red pepper, 1/4 cucumber diced, 2 tablespoons chopped red onion, 4 or 5 olives, 2 tablespoons crumbled feta cheese, 1/2 tomato sliced, 2 tablespoons lemon juice and a dash of salt, pepper and oregano.</p> <p>Post-workout: 1/2 cup hummus with baby carrots.</p> <p>Total Daily Macros Calories: 1,549 Protein: 129 grams Fat: 87 grams Carbs: 76 grams Fiber: 23 grams</p> <p>FRIDAY</p> <p>Breakfast: Grain-Free Coconut Protein Pancakes (see recipe).</p> <p>Lunch: Large salad topped with 4 ounces grilled chicken, 2 tablespoons sliced almonds, all the veggies you want and 1 tablespoon of light dressing of choice.</p> <p>Snack: 2 hard-boiled eggs.</p> <p>Dinner: Bun-Free Burger (see last Saturday dinner).</p> <p>Post-workout: Gooney Black Bean Protein Brownies (see recipe).</p> <p>Total Daily Macros Calories: 1,551 Protein: 110 grams Fat: 85 grams Carbs: 89 grams Fiber: 35 grams</p>	<p>Lunch: Mixed grilled veggie bowl topped with 4 ounces grilled chicken and 1/4 avocado.</p> <p>Snack: 6 ounces plain nonfat Greek yogurt topped with 1 tablespoon shredded coconut and 1 tablespoon cashew pieces.</p> <p>Dinner: 6 jumbo grilled shrimp (wrapped in 1/2 slice bacon) served with 1 cup cauliflower rice and grilled veggies of choice.</p> <p>Post-workout: Coconut Chia Protein Pudding (see last Monday post-workout).</p> <p>Total Daily Macros: Calories: 1,550 Protein: 138 grams Fat: 86 grams Carbs: 63 grams Fiber: 24 grams</p>
<p>TUESDAY</p> <p>Breakfast: 4 egg white omelet with sautéed peppers and onions topped with 1/4 cup guacamole and 2 tablespoons salsa.</p> <p>Lunch: 6 jumbo grilled shrimp (wrapped in 1/2 slice bacon) served with 1 cup cauliflower rice and grilled veggies of choice.</p> <p>Snack: 2 hard-boiled eggs.</p> <p>Dinner: 6 ounces grilled salmon, assorted grilled veggies of choice, 1 tablespoon butter.</p> <p>Post-workout: Coconut Chia Protein Pudding (see last Monday post-workout).</p> <p>Total Daily Macros Calories: 1,496 Protein: 142 grams</p>	<p>THURSDAY</p> <p>Breakfast: Avocado power smoothie (see last Thursday breakfast).</p> <p>Lunch: 6 jumbo grilled shrimp served with 1 cup cauliflower rice and grilled veggies of choice.</p> <p>Snack: 4 ounces soft mozzarella cheese with 1 sliced tomato, drizzled with balsamic vinegar and topped with 1-2 tablespoons chopped fresh cilantro.</p> <p>Dinner: Greek goddess salad – Large romaine lettuce salad topped</p>	<p>SATURDAY</p> <p>Breakfast: 2 eggs, 2 egg whites, chopped veggies of choice, fry over medium-high heat using 1 tablespoon coconut oil and season with favorite seasonings.</p>	<p>SUNDAY</p> <p>Breakfast: Cheesy Egg Muffins (see recipe).</p> <p>Lunch: Chicken Cobb Salad (see last Sunday lunch).</p> <p>Snack: 2 medium celery sticks topped with 2 tablespoons natural peanut butter.</p> <p>Dinner: Treat meal of choice</p> <p>Post-workout: Gooney Black Bean Protein Brownies (see recipe).</p> <p>Total Daily Macros (without treat meal) Calories: 1,114 Protein: 84 grams Fat: 62 grams Carbs: 63 grams Fiber: 13 grams</p>

RECIPES

EASY SPINACH, MUSHROOM AND BACON FRITTATA

Makes 1 serving

INGREDIENTS:

1 large egg
3 egg whites
1/2 cup chopped spinach
1/4 cup chopped mushrooms
2 slices bacon, chopped
1 tablespoon nonfat milk
Dash of salt
Dash of pepper

DIRECTIONS:

1. Preheat the oven to 350 degrees F.
2. Cook bacon in a small skillet until crisp. Set aside. Add in the spinach and mushrooms and cook until wilted. Add back in the bacon and remove from heat.
3. In a small bowl, whisk together the eggs, egg whites, milk, salt and pepper.
4. Carefully pour the egg mixture into the skillet with the spinach, mushrooms and bacon. Cook over medium heat until frittata is set just at the edges, about 10 minutes. Transfer the skillet to the oven and bake until just set, about 20 minutes.
5. When done, remove the frittata from the skillet by carefully cutting around the edges to loosen. Slide out and allow to sit for about 15-20 minutes before serving.

Nutrition Per Serving

CALORIES: 249
TOTAL FATS: 12 GRAMS
SATURATED FAT: 4 GRAMS
TRANS FAT: 0 GRAMS
CHOLESTEROL: 204 MG
SODIUM: 1173 MG
TOTAL CARBOHYDRATES: 7 GRAMS
DIETARY FIBER: 2 GRAMS
SUGARS: 2 GRAMS
PROTEIN: 26 GRAMS
IRON: 2.35 MG



CHEESY EGG MUFFINS WITH A KICK

Makes 6 servings (2 muffins per serving)

INGREDIENTS:

12 whole eggs
1 cup shredded pepper jack cheese
1 medium yellow onion, chopped
1 clove garlic, minced
½ teaspoon sea salt
1 teaspoon black pepper
Splash of milk of choice

DIRECTIONS:

1. Preheat the oven to 350 degrees F. Spray a 12-cup muffin pan with nonstick cooking spray and set aside.
2. In a large bowl, whisk together the eggs and milk. Add salt, pepper and garlic and whisk until combined.
3. Fill each muffin tin with onions and cheese until about ½ of the way full. Then pour the egg mixture over top until ¾ full.
4. Bake at 350 for 30 minutes or until a toothpick inserted into the center comes out clean. Allow to set before serving.

Nutrition Per Serving

CALORIES: 242
TOTAL FATS: 14 GRAMS
SATURATED FAT: 6 GRAMS
TRANS FAT: 0 GRAMS
CHOLESTEROL: 390 MG
SODIUM: 981 MG
TOTAL CARBOHYDRATES: 6 GRAMS
DIETARY FIBER: 0 GRAMS
SUGARS: 3 GRAMS
PROTEIN: 20 GRAMS
IRON: 1.8 MG

GRAIN-FREE COCONUT PROTEIN PANCAKES

Makes 1 serving

INGREDIENTS:

3 large egg whites
½ cup light coconut milk (canned)
½ cup coconut flour
1 teaspoon baking soda
1 teaspoon vanilla extract
1 tablespoon butter, melted
1-2 packs Splenda or sweetener of choice

DIRECTIONS:

1. In a medium bowl, lightly whisk together the eggs, coconut milk, butter and vanilla until combined.
2. In another medium bowl, combine the sweetener, coconut flour and baking soda.
3. Add the wet ingredients to the dry and mix well to combine.
4. Heat a griddle or skillet over medium heat and coat with cooking spray. Drop a ¼ cup of the batter onto the heated skillet. Cook for 2-3 minutes per side until golden brown. Enjoy!

Nutrition Per Serving

CALORIES: 484
TOTAL FATS: 25 GRAMS
SATURATED FAT: 17 GRAMS
TRANS FAT: 0 GRAMS
CHOLESTEROL: 30 MG
SODIUM: 1,542 MG
TOTAL CARBOHYDRATES: 43 GRAMS
DIETARY FIBER: 24 GRAMS
SUGARS: 3 GRAMS
PROTEIN: 19 GRAMS
IRON: 0.44 MG

GOOEY BLACK BEAN PROTEIN BROWNIES

Makes 12 servings

INGREDIENTS:

1 14-oz. can low-sodium black beans, drained and rinsed
4 scoops chocolate whey protein powder
2 large eggs
½ cup unsweetened dark cocoa powder
2/3 cup ground pitted dates
1 teaspoon coconut oil
1 tablespoon nonfat milk of choice (unsweetened)
1 teaspoon balsamic vinegar
½ teaspoon baking powder
½ teaspoon baking soda
½ teaspoon instant coffee granules
1 cup semisweet chocolate chips

DIRECTIONS:

1. Preheat oven to 350 degrees F. Spray a 9-x-9-inch baking pan with nonstick cooking spray and set aside.
2. In a blender or food processor, process the black beans, protein powder, eggs, cocoa powder, dates, oil, milk, balsamic vinegar, baking soda, baking powder and coffee until smooth.
3. Pour into a large bowl and fold in ¾ cup of the chocolate chips. Then pour the batter into your greased pan and sprinkle the remaining chocolate chips on top.
4. Bake the brownies for 25-30 minutes, or until a toothpick inserted into the center comes out clean. Allow to cool completely on a wire rack before cutting into squares.

Nutrition Per Serving

CALORIES: 239
TOTAL FATS: 9 GRAMS
SATURATED FAT: 5 GRAMS
TRANS FAT: 0 GRAMS
CHOLESTEROL: 58 MG
SODIUM: 184 MG
TOTAL CARBOHYDRATES: 34 GRAMS
DIETARY FIBER: 6 GRAMS
SUGARS: 18 GRAMS
PROTEIN: 13 GRAMS
IRON: 2.11 MG

AVOCADO POWER SMOOTHIE

Makes 1 serving

INGREDIENTS:

½ scoop vanilla whey protein powder
½ ripe avocado
½ cup nonfat milk
½ cup plain nonfat Greek-style yogurt
¼ cup frozen chopped spinach
1 teaspoon ground flax
Ice (optional)

DIRECTIONS:

1. Place all ingredients in a blender and blend until smooth. Enjoy!

Nutrition Per Serving

CALORIES: 339
TOTAL FATS: 19
SATURATED FAT: 3 GRAMS
TRANS FAT: 0 GRAMS
CHOLESTEROL: 46 MG
SODIUM: 217 MG
TOTAL CARBOHYDRATES: 19 GRAMS
DIETARY FIBER: 9 GRAMS
SUGARS: 6 GRAMS
PROTEIN: 28 GRAMS
IRON: 1.49 MG ■

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BECOME A GLUTE- SMITH

Shape Up With One Versatile Machine


Featuring 2x IFBB Bikini Olympia Champion

Ashley Kaltwasser

THE SMITH MACHINE ISN'T JUST FOR SQUATS AND PRESSES. IT'S A VERSATILE MACHINE THAT CAN BENEFIT YOUR ENTIRE BODY, ESPECIALLY YOUR BACKSIDE. WITH THE HELP OF TWO-TIME IFBB BIKINI OLYMPIA CHAMPION ASHLEY KALTWASSER, WE WILL SHOW YOU HOW TO HAVE A KILLER BOOTY-BUILDING WORKOUT WITH JUST ONE PIECE OF EQUIPMENT. IT'S PERFECT FOR THOSE DAYS WHEN YOU NEED A TIME-EFFICIENT WORKOUT, THE GYM IS TOO PACKED FOR YOUR TASTE OR YOU JUST NEED A CHANGE OF PACE.

By JAIME BAIRD | Photography by IAN SPANIER

Styling by ELYSE BLECHMAN
Hair and Makeup: LAURA SHELLEY
Top, shorts: BETTER BODIES
Footwear: NIKE

A woman with long dark hair, wearing an orange and pink sports bra and black leggings, is performing a pull-up on a gym machine. She is smiling and looking back over her shoulder. The machine has a horizontal bar and a weight stack. The background shows other gym equipment and a brick wall.

“
STAY CONSISTENT
AND REALIZE THAT
RESULTS WON'T SHOW
OVERNIGHT.
”

DO YOU
LOVE
SMITH?

There are a number of free-weight purists who have little love for the Smith, in part because its fixed straight up and down movement doesn't mimic the natural motion of the squat or other various pressing moves. This is true. However, this fixed motion also provides benefits that can be harnessed for our training advantage. Here are a few reasons to love the Smith machine:

STABILITY. This one cuts both ways. Because the Smith is fixed horizontally, it provides more stability than free weights. This is good in that you can focus on the muscle you are trying to target more than challenging your stabilizers. However, strong stabilizers are critical for a healthy, functional body, so one could see this as a drawback as well. The bottom line? Use the Smith strategically, not all the time, to get a balance of both.

FOCUS ON FEEL. As mentioned above, because the Smith is stable, it's a great machine to help individuals focus on feeling the muscle working. When one tries new exercises or is new to the gym altogether, making the connection to the muscles being targeted can be challenging. Simplifying the movements by eliminating the need to stabilize can help one learn how a movement should feel.

FORM ADJUSTMENTS. Another benefit of the Smith's stability is that it enables you to adjust your body position in ways you couldn't with free weights. For example, you can move your feet a little forward in a squat and lengthen a lunge to ease the joints and target the glutes/hams.

ONE-STOP SHOP. There are times when you need a "get in and get out" workout. Being able to stick to one piece of equipment for a workout is an effective way to save time—the versatility of the Smith allows you to do just that.

BUILT-IN SPOTTER. If you need to quickly bail on a set, it is easy to re-rack with the Smith. Just flip your wrists and you can rack the weight no matter where you are in the movement. This is a reassuring benefit for those who want to challenge themselves to lift heavier and don't have a spot.

VARIATION. While some people religiously stick to certain pieces of equipment and exercises for their workouts, most of us prefer new stimulus regularly for our training. It keeps our minds interested and our bodies challenged. The Smith machine is a great tool to add to your training arsenal.

the WORKOUT

- Perform exercises as straight sets.
- Rest 45 seconds between sets.
- No rest between legs for unilateral moves.

FEET FORWARD SQUAT: 3 X 10-12 REPS

PISTOL SQUAT: 3 X 8 REPS

ROMANIAN DEADLIFT: 3 X 10 REPS

BULGARIAN SPLIT SQUAT: 3 X 10 REPS

ALTERNATING REVERSE LUNGE: 3 X 10 REPS

QUADRUPLED HIP EXTENSION: 3 X 10 REPS

GET IT
RIGHT

Feet-Forward SQUAT

Position bar so it rests across the back of the shoulders/traps. Walk your feet forward a foot or so. Unlatch the bar and lower into a deep squat (parallel or a little below). Pressing through heels, drive back up to the starting position.



SMITH BENEFIT

The Smith allows you to adjust your body position (feet more forward) to ease the joints and focus the work in the glutes and hamstrings.



Romanian DEADLIFT

Center a bench or box under the bar. Standing on the bench/box with your feet a few inches apart and the bar, unlatch the bar and bend at the hips to lower the bar down. Focus your weight in your heels and push your butt to the back wall. To ascend up, contract the glutes and push your hips forward. Make sure to keep your back straight throughout the movement.



SMITH BENEFIT



Because the bar is fixed horizontally, you can use the bar as leverage when pushing your glutes back on the descent to enable a deeper stretch in the butt and hamstrings, increasing the range of motion, joints and focus the work in the glutes and hamstrings.

POST-WORKOUT FUEL

To help fuel recovery and muscle building, Ashley loves to have GASPARI Nutrition MYOFUSION ADVANCED PROTEIN POWDER as part of her post-workout meal. She will drink it as a shake or mix it into cream of rice.



“

BE PATIENT. IT TOOK ME YEARS TO ACHIEVE THE BODY THAT I HAVE NOW.”

”

BULGARIAN SPLIT SQUAT

Place a bench or box a few feet behind the bar. Rest the bar across the back of your shoulders/traps and place the top of one foot on the box. Adjust the front foot forward to a comfortable lunge position. Keeping your torso upright, bend the front knee until your thigh is parallel to the floor. Make sure the front knee stays behind the toes. Finish the rep by pushing through the front heel to ascend up.



SMITH BENEFIT

Stabilizing is usually a challenge with this move, but that isn't the case with the Smith. The stable bar enables you to focus more effort on driving hard through the front heel to target the glutes and hamstrings. Also, the Smith allows you to more comfortably take a longer lunge stance, which for some facilitates a better glute/ham workout and is easier on the knees. >



Pistol SQUAT

Standing on an aerobics bench with one foot hanging off, rest the bar across the back of your shoulders/traps. Unlatch the bar and descend into a squat, lifting the non-working leg forward as you lower down. Pressing through the heel, ascend up out of the squat.



SMITH BENEFIT

Pistol squats are very difficult. Some of the fittest people can't accomplish this move with free weights or body-weight. The Smith provides the stability so you can perform this move and build up unilateral squat strength, which may help you progress to the bodyweight version.



IT IS NORMAL TO HIT PLATEAUS EVERY ONCE IN A WHILE—YOU JUST HAVE TO PUSH THROUGH AND TRY SOMETHING NEW.



Alternating Reverse LUNGE



Position bar on the back of the shoulders/traps and stand with your feet together. Unlatch the bar and step back with one foot to lower into a reverse lunge. The back knee should almost touch the ground. Then, while bringing the back leg forward to the starting position, push through the front foot heel to straighten the leg. Repeat, stepping back with the other leg.

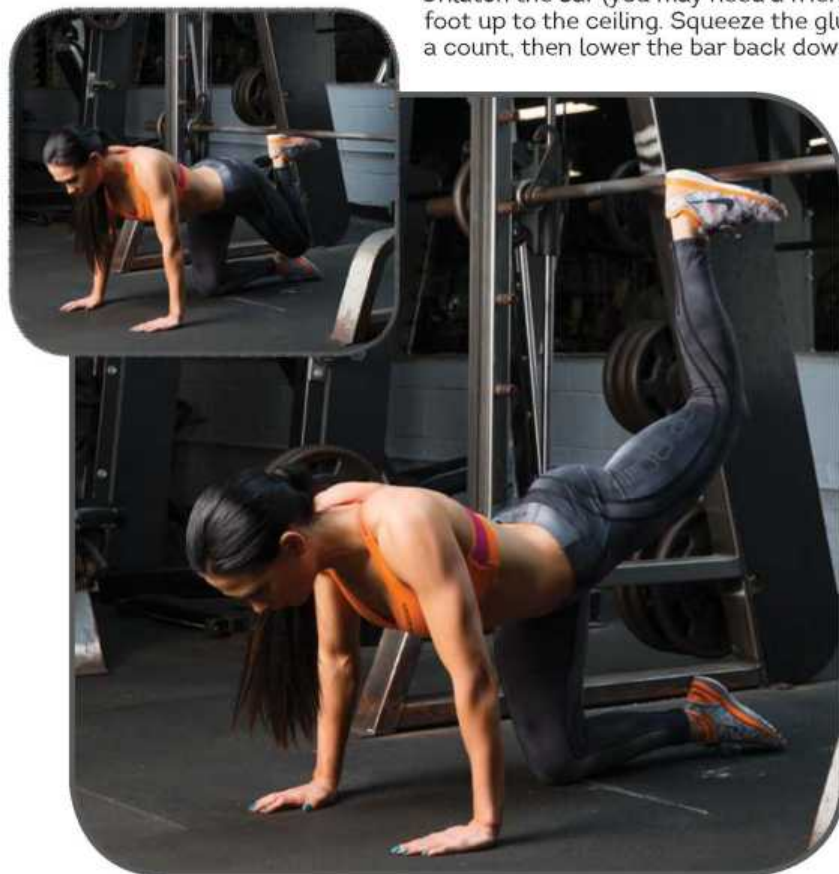


SMITH BENEFIT

Because of the Smith's stability, it's easier to lengthen and deepen the lunge to increase range of motion.

Quadrupled Hip EXTENSION

Position the bar at about knee height. Get on your hands and knees and lift one foot straight up and place the arch of the foot on the bar. Adjust your body position to find the right angle. Unlatch the bar (you may need a friend to assist) and drive the foot up to the ceiling. Squeeze the glute and hold at the top for a count, then lower the bar back down.



SMITH BENEFIT

Without the Smith, adding resistance to the move is a challenge, as sufficiently heavy ankle weights are hard to come by and holding a dumbbell behind the knee is awkward and limits range of motion.

ABOUT ASHLEY

2X IFBB BIKINI OLYMPIA CHAMPION
2X IFBB BIKINI INTERNATIONAL CHAMPION
12 PROFESSIONAL WINS
GASPARI NUTRITION & BETTER BODIES ATHLETE

CHECK OUT ASHLEY'S "KEEP IT FRESH" COLUMN AT FITNESSRXWOMEN.COM FOR HER FUN AND FLAVORFUL FIT LIVING TIPS. YOU CAN ALSO FIND HER ON FACEBOOK (/BIKINIASHLEY), TWITTER (@ASHLEYKFIT) AND INSTAGRAM (ASHLEYKFIT). ASHLEY CAN BE CONTACTED FOR APPEARANCES THROUGH WWW.FMG-FITNESSMANAGEMENT-GROUP.COM.

CHATTING WITH THE CHAMP

Ashley fills us in on her prep to defend the Bikini Olympia title, her great glute secrets, how she stays motivated and more!

FRX: You are returning to the Olympia as the only repeat IFBB Bikini Champion. How are you feeling as you prepare to defend your title?

ASHLEY: It's a lot of pressure. But, I deal well under pressure, and I use it as extra motivation. I am feeling great! I am in a good place mentally and physically.

FRX: Are you approaching this prep differently?

ASHLEY: This prep is very different from my contest preps in the past. Due to my crazy travel schedule, most of my workouts have been on the road. Instead of working out at the same gym every day at my home in Ohio, I've experienced a variety of gyms and trained with several different trainers as well. I think this is beneficial to me, because I am trying new techniques and workout equipment that I am not accustomed to. I am a true believer of switching things up and shocking your body for optimal results. My body has responded well so far!

FRX: What are your secrets for killer glutes and legs?

ASHLEY: I ran track all throughout high school and college. I truly believe that this gave me a good base to work with. I have added muscle to my legs and glutes since then by consistently training them twice a week. I really try to focus on the mind-muscle connection. Proper technique is also important to building quality muscle.

FRX: Do you ever feel discouraged with your progress?

ASHLEY: Yes, of course. Sometimes it feels like our bodies just do not want to cooperate with us. But it is important to keep in mind that it is normal to hit plateaus every once in a while— you just have to push through and try something new.

FRX: What about low motivation days? Do you have those?

ASHLEY: I sure do. I just think to myself, "Training is only a small portion of my day, and I will feel so much better when I'm finished." I will also watch a few motivational YouTube videos, listen to a few of my favorite songs, or read the latest issue of FitnessRx For Women magazine.

FRX: Women all over the world look up to you. What's your best advice for those wanting to get in shape like you?

ASHLEY: Just to stay consistent and realize that results won't show overnight. Be patient. It took me years to achieve the body that I have now. Don't set your expectations too high, just set small realistic goals instead. ■

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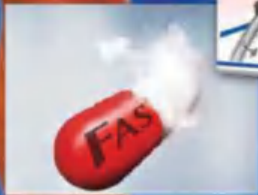
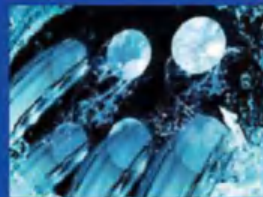
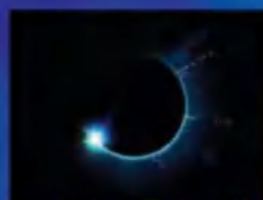
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IFBB Bikini Pro
Juliana Daniell
(Fastin Spokeswoman)

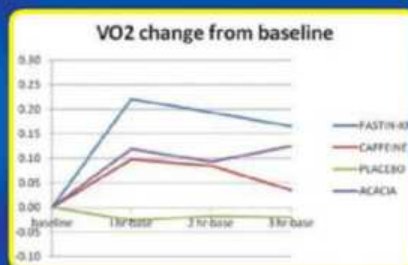
• Fastin®-RR users lost 208% more WEIGHT and 385% MORE FAT than placebo and 167% more than the Caffeine group!

• Fastin®-RR was shown to elevate Energy Expenditure (Metabolism) 22.1 % in 45 Minutes when compared against Placebo and was (66% stronger than 30mg Ephedrine and 152% stronger than 10mg Ephedrine)!

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Get *Sculpted* *and* *Strong:*

TIME TO GET SCULPTED AND STRONG! EVERYONE WANTS A SIX-PACK, OF COURSE. BUT WHILE YOU'RE WORKING TOWARD THAT GOAL, WHY NOT BUILD YOUR ARMS AND SHOULDERS, TOO? AFTER ALL, SHAPELY ARMS AND SHOULDERS GO PERFECTLY WITH TIGHT AND DEFINED ABS. PLUS, THERE'S NOTHING BETTER THAN FEELING FIT AND STRONG. THAT BEING SAID, OUR SCULPTED ARMS AND ABS PROGRAM WILL INCREASE THE INTENSITY AND MAKE YOU FEEL THE BURN FROM TOP TO TUMMY!

FOR THIS PROGRAM, WE'VE ENLISTED THE HELP OF THE BEAUTIFUL, FIT AND STRONG IFBB FIGURE PRO CANDICE LEWIS. SINCE TURNING PRO IN 2011, CANDICE HAS ACHIEVED SEVEN PRO WINS AND PLACED SECOND AT THE 2015 ARNOLD CLASSIC. CLEARLY, CANDICE IS THE PERFECT ROLE MODEL WHEN IT COMES TO GETTING STRONG AND TIGHT! SO ARE YOU READY TO SHAPE UP, TOO? COME ON— LET'S GET STARTED! »

ABS

&

ARMS

with **IFBB**
Figure Pro
Candice Lewis



By LISA STEUER
Photography by Ian Spanier

Styling by JENNIFER TURNER
Hair and Makeup by SHARON CASEY
Clothing and footwear by NIKE

GET IT RIGHT

SIDE CRUNCH:

Keep your core engaged as you lift your leg to keep yourself stable, and crunch toward your outstretched toes.



THE WORKOUTS

You can do these workouts on the same day a few times a week or on separate days with other workouts if you want to change it up.

ABS

SIDE CRUNCH: 3 X 15

BOW EXTENSIONS: 3 X 15, EACH SIDE

BOSU JUMPS: REPEAT FOR ONE MINUTE

X-FACTOR: 24-30 REPS, ALTERNATING SIDES

BEAR: 3 SETS OF 10-15 REPS

ARMS/SHOULDERS

DUMBBELL LATERAL RAISES: 3 SETS OF 15 REPS

FRONT KETTLEBELL RAISES: 3 SETS OF 10-12 REPS

REAR FLIES WITH INCLINE BENCH: 3 SETS OF 10 REPS

CABLE SHOULDER PRESS: 3 SETS OF 15 SETS

**TRICEPS EXTENSIONS WITH RESISTANCE BANDS:
3 SETS OF 10-12 REPS ON EACH SIDE**

CABLE ARM CURLS WITH ROPE: 3 SETS OF 15 REPS



BOW EXTENSIONS:

Hold a dumbbell in both hands above your right shoulder and point your left foot out to the side. In one motion, draw your elbows down to lower the weight as you bend your left knee toward your chest. Reverse the movement for your other side.



BOSU JUMPS:

Start in a plank position with your feet on a BOSU. Simultaneously jump your feet up and out to the side of the BOSU ball.



X-FACTOR:

Start on your back with your body spread out on the floor in an X position. Holding weights in each hand, lift your left hand and right leg, bringing the weight toward your right shin. Lower back down and alternate sides.



BEAR:

Get into an extended arm plank, propped up on your hands with hands directly beneath your shoulders, feet hip-width apart and on gliders. Press down on the gliders and slowly push the knees in so they come about 4 inches in front of your hip. Then push back to starting plank position. »



DUMBBELL LATERAL RAISES:

Begin by grasping two dumbbells and allow them to hang by your hips. With a slight bend to your elbows, raise the dumbbells up and out to the sides until they reach shoulder level. Slowly return the weights back to the start position.



GET TO KNOW CANDICE

CANDICE TALKS TRAINING, MOTIVATION, ACHIEVING GOALS AND MORE!

FRX: How did you get into fitness? Were you active when you were growing up?

CANDICE: I ran track in high school and college. Shortly after graduating I wanted to look for other avenues/outlets that promoted a healthy and active lifestyle. Competing in the fitness industry was something I stumbled upon and by learning more and more about the industry, I felt excited about the opportunity to compete and see where it would take me.

One of my life goals has been to stay active and fit my entire life. I started reading fitness magazines and wanted to become a fitness model. After competing in my first local show and getting my feet wet, I became hooked and knew this was a good way to start a fitness modeling career.

FRX: What do you do when you are not competing?

CALLIE: When I'm not competing I love being outdoors, and living in Colorado provides unlimited hiking and camping. I love being surrounded by nature.

FRX: What's your favorite body part to train and why?

CANDICE: My favorite body part to train is legs because they are the strongest muscle on my body. My legs are powerful, so I can lift really heavy— it's so empowering as a woman to do so.

FRX: What's something you've struggled with along your health/fitness journey, and how did you deal with it?

CANDICE: I struggled with dieting early on in my fitness career but learned how to be strong mentally and overcome the temptations and since then, my



FRONT KETTLEBELL RAISES:

Holding a kettlebell with both hands with an overhand grip, slowly raise the kettlebell up above your head, and then control the weight and slowly bring it to the bottom position.



focus has always been to eat clean so I can look my best onstage. You just come to a realization that if you cheat on your meals, you cheat yourself and deprive yourself of looking your complete best. It's just not worth it. Anything worth doing is worth doing 100 percent.

FRX: What's your favorite way to de-stress?

CANDICE: Playing with my Yorkie, Phenix, and going to the movies. I love traveling with my husband and embarking on new journeys and trying to find new hobbies. You can't go wrong with spa days, either. I'm an aesthetician so I also love the beauty industry.

FRX: What are some keys to success that have helped you achieve your goals?

CANDICE: Surround yourself with people who believe in you. It's also important to be self-motivated.

FRX: So how do you stay motivated?

CANDICE: By continuing to set new goals and inspiring others. It helps me to stay motivated by seeing others accomplish their goals and overcome their challenges.

FRX: What is your diet like?

CANDICE: My diet consists of high protein and is similar to a paleo diet. I consume a lot of food that's also high in fiber, because an active gut equals flat abs. I love carb cycling, especially getting ready for a competition. The results are almost instant.

FRX: What's a great piece of advice that someone once gave you?

CANDICE: To never give up on your dreams!

FRX: What accomplishment are you most proud of thus far?

CANDICE: Getting top three at the 2014 Mr. Olympia and runner-up at this year's Arnold Classic.

FRX: What do you hope to accomplish in the next year?

CANDICE: I hope to land a cover of a magazine, which would be a dream come true. I hope to win some more shows and continue my passion, which is to promote health and fitness.



SCULPTED ABS CARDIO

OF COURSE, TO ACHIEVE A FLAT STOMACH, CARDIO IS ESSENTIAL. "IN ORDER TO LOSE FAT, YOU HAVE TO DO CARDIO. THIS ALLOWS YOU TO LEAN OUT ENOUGH TO SEE YOUR ABS," SAID CANDICE. "I WILL DO CARDIO FOUR TO SEVEN DAYS A WEEK WHILE IN SEASON. I LIKE HIGH-INTENSITY INTERVAL TRAINING BECAUSE IT CAN BE DONE IN A SHORT AMOUNT OF TIME. I TEND TO DO CARDIO YEAR-ROUND BUT KEEP IT BETWEEN 20-30 MINUTES SO I DON'T RISK BURNING MUSCLE."

CANDICE'S TOP TIPS FOR ABS & ARMS

FOR SCULPTED ABS: "EAT CLEAN, INCORPORATE CARDIO AND DO AB EXERCISES TO TARGET DIFFERENT PARTS OF YOUR CORE. IT'S IMPORTANT TO ALSO BE CONSISTENT. THE MORE CONSISTENT YOU ARE, THE MORE YOU WILL BEGIN TO SEE RESULTS."

FOR SCULPTED ARMS AND SHOULDERS: "LIFT HEAVY, MIX UP YOUR REPS AND SETS AND CONSTANTLY CHANGE WORKOUTS FOR MUSCLE CONFUSION. ALSO, TAKE IN ENOUGH CARBS AND PROTEINS TO MAXIMIZE MUSCLE GROWTH. TRY WORKING OUT WITH A PERSON WHO'S STRONGER THAN YOU TO HELP PUSH YOU IN THE GYM." >>



REAR FLIES WITH INCLINE BENCH:

Straddle a bench inclined to 45 degrees, pressing your chest into the top of bench, holding dumbbells. With a slight bend to your elbows, raise the dumbbells up and out to the sides until they are parallel with the ground. Contract your delts at the top of the movement and then slowly return the dumbbells back to the start position.



CABLE SHOULDER PRESS:

After selecting your weight, sit at the cable machine, grasping the handles. Begin by extending through the elbows, pressing the cables together above your head. Pause at the top before returning to the starting position.



TRICEPS EXTENSIONS WITH RESISTANCE BANDS:

Place one end of the band under your right foot and hold the other end in your right hand, bending your elbow. Straighten your elbow, pointing your hand toward the ceiling, and then slowly return to the start position.

CABLE ARM CURLS WITH ROPE:

Stand with your heels under your hips while holding a rope attached to a low pulley at the cable machine. Lift and curl the rope for a full range curl, only moving your forearms and holding for a moment at the top. Then slowly lower to starting position. ■



SUPPLEMENT STACK

SAN NUTRITION BCAAs,
PRE-WORKOUT MEGATRON,
TIGHT XTREME RELOADED FAT BURNER,
RAW FUSION PLANT PROTEIN
ALL SUPPLEMENT FROM SAN NUTRITION



KEEP UP WITH CANDICE

TWITTER: @ICANDYLEWIS
INSTAGRAM: @ICANDYLEWIS
FACEBOOK: CANDICE LEWIS

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CANDICE CAN BE CONTACTED FOR APPEARANCES THROUGH WWW.FMG-FITNESS-MANAGEMENTGROUP.COM.



Out of **SIGHT**, Out of **MIND**.

Backs often get the shaft in terms of training priority. However, strong and conditioned trunk muscles are critical for a balanced and healthy body. And, a great v-taper helps create the illusion of a smaller waist. Who doesn't want that?

AN INSIDE LOOK AT HOW TO TRAIN LIKE A CHAMP

Four-time Figure Olympia Champion Nicole Wilkins has one of the best backs in the business, but she has had to work hard for it. Emphasizing classic compound moves like pull-ups and rows,

Nicole has built an impressive rear view, which no doubt contributed to her back-to-back Olympia wins in 2013 and 2014.

Seeking her fifth title, Nicole continues to push for improvements, including adding width to her back in the off-season. In this BACK TO BACK workout, you get a look at how the champ trains. But remember, to get results, it's not just about the exercises— it's also the intensity you bring to your workouts. Nicole reminds us, "As long as you are giving it everything you have and not giving up, it will pay off in the end."

BACK TO BACK

WITH 4X IFBB FIGURE OLYMPIA CHAMPION NICOLE WILKINS

By **JAIME BAIRD** | Photography by **GREGORY JAMES**

“Nothing worthwhile is ever easy. Know that we ALL struggle—champion or not. No one has it easy ALL of the time. As long as you are giving it everything you have and not giving up, it will pay off in the end.”



Styling by Trish Stella
Hair and Makeup by Jessica Colley
Clothing by Nike

BACK ON TRACK

A FEW REASONS TO PRIORITIZE BACK TRAINING...

IMPROVE POSTURE.

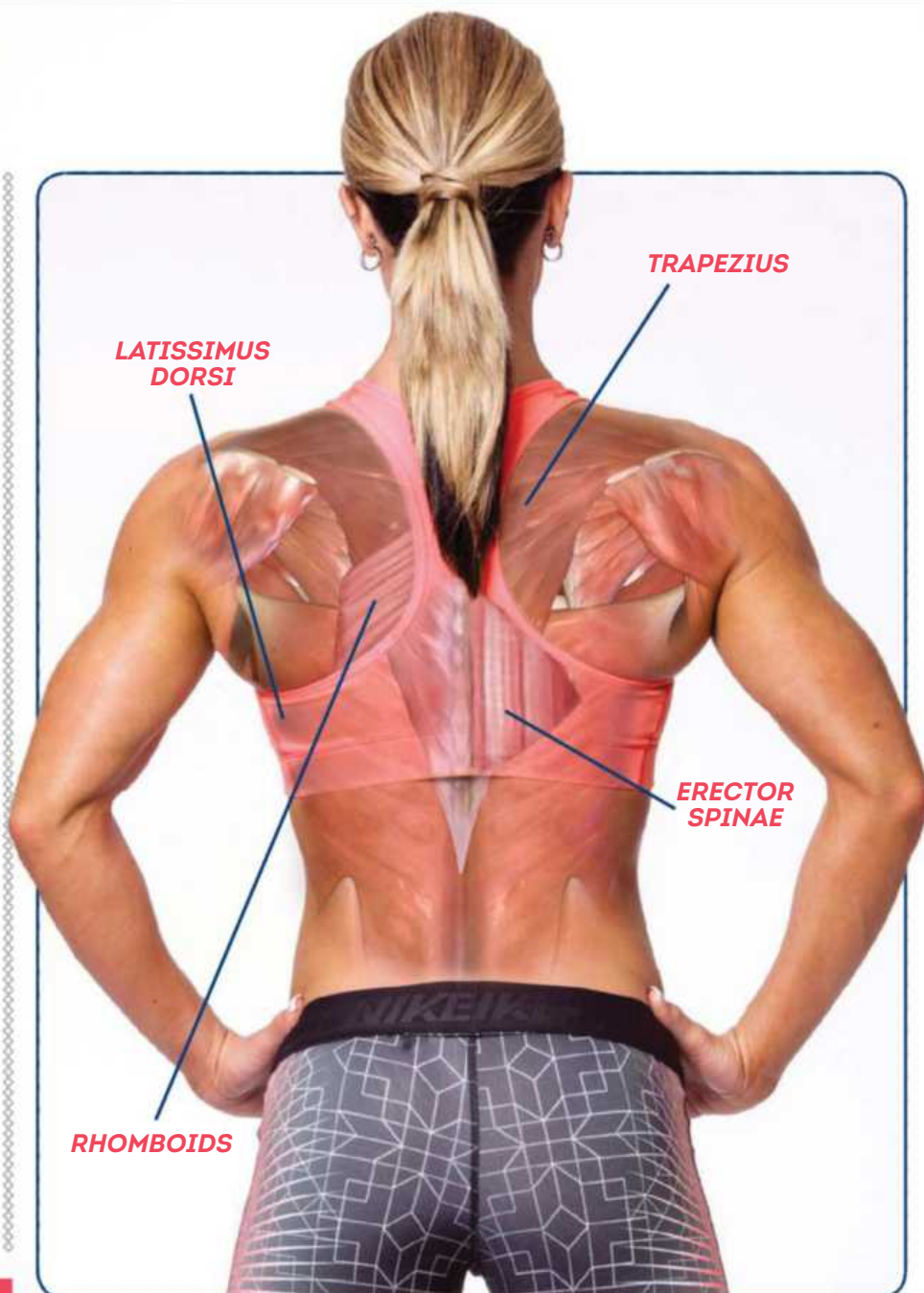
Sitting all day slumped over the computer leads to tight chest muscles and overstretched back muscles. As a result, one develops poor posture even when standing. By strengthening the back, you can correct this imbalance, stand up straighter and even look taller and leaner.

AVOID INJURY.

When the back muscles are weak and unconditioned, injury and lower back pain can result, as there often isn't sufficient spine stability for functional movements and heavy lifts. According to the National Academy of Sports Medicine, approximately 80 percent of U.S. adults deal with chronic lower back pain thanks to trunk muscle weakness.

BETTER AESTHETICS.

If like most women you have more size in your lower body, building your upper body will help your body look balanced. And, building your lats will help create some width across your upper back, which will create the illusion of a smaller waist.



BACK TO BASICS

A QUICK ANATOMY OVERVIEW TO HELP YOUR MIND-MUSCLE CONNECTION...

LATISSIMUS DORSI

This fan-like muscle helps to create the sought-after v-taper. Extending from under the shoulder down to the small of the back, the lats pull the shoulders downward and back, as done during pulldowns, pull-ups and rows.

TRAPEZIUS

There are three trap muscles, which extend from the back of the neck down to between the shoulder blades facilitating scapular elevation (upper trap), retraction (middle trap), depression (lower trap) and stability. Rows, pulldowns, chin-ups and shrugs target these muscles.

RHOMBOIDS

Located between the shoulder blades beneath the trapezius, the rhomboids are responsible for scapular retraction and are targeted with movements like the T-bar row.

ERECTOR SPINAE

Muscles that run the length of the spine and are responsible for back extension, rotation and lateral flexion. They are critical for spine stabilization during functional movements and heavy lifts. You will train the spinal erectors with exercises like hyperextensions and deadlifts.

PHOTO BY MARC ROYCE

THE WORKOUT

- » Lift as heavy as you safely can while keeping good form.
- » Rest one to two minutes between pull-up sets.
- » For all other exercises, rest 30-45 seconds between sets.

EXERCISE	REPS/TIME
DEADLIFTS	3 X 10-12
PULL-UPS	3 X 10 (OR AS MANY AS YOU CAN)
T-BAR ROW	3 X 10-12
CABLE BENT-OVER ROW	3 X 10-12
CLOSE-GRIP PULLDOWN	3 X 10-12
STRAIGHT-ARM PULLDOWN	3 X 10-12
PLANK DUMBBELL ROW	3 X 10-12
WEIGHTED HYPEREXTENSION	3 X 12-15

DEADLIFT



Get It Right

1) DEADLIFT Standing with your feet 8-12 inches apart and toes pointed slightly outward, squat down and grasp the bar using a mixed grip. Keeping your back flat, chest up, arms straight, eyes forward and weight in the heels, stand up by extending the knees and driving your hips forward. Make sure to not shrug or lean backwards.

NICOLE'S TIP: "This exercise requires the most strength, so I recommend doing it first."

2) PULL-UPS Grab the bar wider than shoulder-width apart. Pull your body up so that your chin is above the bar. Slowly come down to starting position.

NICOLE'S TIP: "Use chin dip assist machine, bands or a spot, if needed."

3) T-BAR ROW Using an overhand grip, lift the weight up, starting the contraction from the back. Think of leading with your elbows rather than your hands.

NICOLE'S TIP: "Use a T-Bar with a chest pad so that your lower back doesn't fatigue first, especially after doing deadlifts."



T-BAR ROW



PULL-UPS



CABLE
BENT-OVER
ROW



BACK STACK

Nicole backs up her training with these supplements:

PRE-WORKOUT:

Met-Rx Nuclear X – Watermelon

INTRA-WORKOUT:

Met-Rx BCAAS – Watermelon

POST-WORKOUT:

L-Glutamine and one scoop
of 100% Met-Rx Ultramyosyn
Whey Chocolate



CLOSE-GRIP
PULLDOWN
(FROM FLOOR)



4) CABLE BENT-OVER ROW Position cable pulley at the bottom position and attach a straight bar. Take a few steps back, lower into a partial squat and bend at the hips to position chest at about a 45-degree angle. Stretch your arms out forward and draw the bar to your abdomen.

NICOLE'S TIP: "When you pull in, squeeze your shoulder blades together."

5) CLOSE-GRIP PULLDOWN (FROM FLOOR)

Position the cable pulley at the top position and attach a close-grip triangle handle. Holding the attachment, sit on the ground. Lean back slightly and allow your arms to fully extend. Bring hands to chest, keeping the elbows close.

NICOLE'S TIP: "This floor variation gives you a great stretch, so make sure you are fully extending the weight each rep."

6) STRAIGHT-ARM PULLDOWN

Position cable pulley at the top position and attach a straight bar or rope. Take a few steps back, bend forward at the hips and allow your arms to fully extend forward. Initiating the movement from your lats, pull the bar down, keeping your arms straight.

7) PLANK DUMBBELL ROW Get into a plank position, gripping dumbbells with feet wider than hip-width apart. Row one dumbbell up to the midsection. Lower the dumbbell, and then perform the row on the other side. That is one rep.

NICOLE'S TIP: "Keep your butt down and in line with your body. Try not to twist."

8) WEIGHTED HYPEREXTENSION

Position lower legs under the machine pads just above the ankles. Bend at the waist and pick up a plate. Holding the plate at your chest, extend your back until your body is in a straight line from head to heels.

NICOLE'S TIP: "Don't go super heavy here. Focus on slow, full range of motion and squeeze at the top."



NICOLE'S TIP

"Make sure you get a full range of motion—start with your arms by your ears and drive the bar to your thighs."

STRAIGHT-ARM PULLDOWN



PLANK DUMBBELL ROW

WEIGHTED HYPEREXTENSION





Q&A WITH THE CHAMP

Nicole talks back, shares what fuels her fire and lets us in on a surprising fact.



FITRX: Have you ever struggled with your back development?

NICOLE: I have always had a dominating lower body. From my gymnastics career, I had thunder thighs. So trying to balance my upper body took a lot of work. Pull-ups are one of my staples in my back routine, and I believe they contributed a lot to my overall shape and strength.

FITRX: In addition to pull-ups, what do you feel are the most important back exercises?

NICOLE: Pull-ups and bent-over rows are “all-over” back exercises putting emphasis on the lat (upper and lower), upper middle back and lower erectors. Hyperextensions help strengthen the lower back, glutes and hamstrings and can help protect against injury.

FITRX: Speaking of back, you had back-to-back wins at the 2013 and 2014 IFBB Figure Olympias. How are you feeling heading into this year’s Olympia? Are you approaching prep differently?

NICOLE: My prep for the Olympia has just begun, and I am feeling really good! I am staying positive and taking it one day, one meal and one workout at a time. I am not really approaching this much differently than I have the last couple years. I liked my physique onstage in 2013 and 2014 and the judges did too, so I am going to try to match that look again as closely as possible. My focus this past off-season was to increase the width of my back a bit and round out my upper glutes.

FITRX: In addition to making IFBB Figure history having won four Olympia titles, you reclaimed your Olympia title two times—something that has never been done and demonstrates your relentless spirit. What fuels your fire?

NICOLE: The second time I reclaimed the title, I had just come off of the worst year of my career. People were writing me off, and I knew I wasn’t done yet. I hired a new trainer and completely revamped my preparation, which got me excited about competing again. I had to prove to others and myself that I was still here and not ready to hang up the heels. Also, I have always been passionate about fitness, and this industry has given me a platform to help others reach their goals, too. So I don’t compete for only myself anymore, I compete for my supporters now, too. I don’t want to let myself or anyone else down and that keeps me going.

FITRX: What would people be surprised to know about you?

NICOLE: As much as I am in the public eye, I can be pretty shy at times. I am a homebody and really enjoy the peace and quiet.

FITRX: You are a champion in every sense of the word, but you have also experienced setbacks. What advice do you have for women struggling to achieve their goals?

NICOLE: Thank you! Nothing worthwhile is ever easy. Know that we ALL struggle—champion or not. No one has it easy ALL of the time. As long as you are giving it everything you have and not giving up, it will pay off in the end.

MORE NICOLE

FOR MORE WORKOUTS AND MOTIVATION FROM NICOLE, BECOME A MEMBER OF HER WEBSITE [NICOLEWILKINS.COM] AND FOLLOW HER ONLINE COLUMN “THE FIT LIFE” AT WWW.FITNESSRXWOMEN.COM. YOU CAN ALSO FIND NICOLE ON TWITTER (@NICOLEMWILKINS), FACEBOOK (WWW.FACEBOOK.COM/NICOLEWILKINS01) AND INSTAGRAM (NICOLEMWILKINS).

NICOLE CAN BE CONTACTED FOR APPEARANCES THROUGH WWW.FMG-FITNESSMANAGEMENTGROUP.COM.

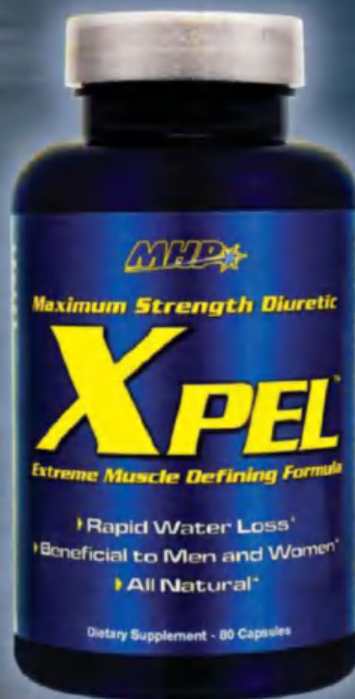


THE FINAL STEP

For A Perfectly Lean Body

Do you struggle with shedding those last few pounds to accentuate your perfectly lean physique? All too often, no matter how hard you work out and diet, you just can't seem to lose those last few pounds to highlight your muscle tone and definition. The fact is, most women are storing 5-10 lbs. of excess water, causing them to look soft and bloated. Fortunately, XPEL, the powerful all-natural diuretic, can help you drop water weight fast. It's so effective that within 12 hours, XPEL will begin to shed the excess water weight and reveal your sexy, lean and toned body.

XPEL is the final step in your pursuit of physical perfection.



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HOW TO NOT BE INTIMIDATED BY THE GYM

Strength training is no longer just for bodybuilders or athletes. It has gained a lot of popularity in the fitness world among both men and women and across all age groups because it helps you feel better, look better and live a fit, healthy life!

The bummer, however, is the number of people (especially women) who want to start strength training but feel intimidated in the weight room. I get it. Trying something new can be a scary thing, especially in the fitness realm, where many people already feel unsure of themselves. I have been lifting for more than a decade and even I still get a little nervous walking into a new gym. Being a professional, I feel I am “supposed to know” everything in the gym, so I feel a little silly reading instructions on new equipment and figuring out where everything is.

Don't worry, though, I have put together a list of helpful tips to help you find your way—and your confidence—the next time you are in the gym.

1. Educate yourself and have a plan. Do some research before you go to the gym. Learn what you should be doing, how exercises are performed and have a plan of attack before you get there. There is a ton of useful information and print-and-go workouts online at FitnessRxWomen.com and on my website: www.nicolewilkins.com. It may also be a good idea to hire a personal trainer for a few sessions to learn basic movements and get coaching on more complicated exercises to make sure you are doing them properly.

2. Tour the gym. No matter where you train, there should be someone on staff who is more than willing to take you on a tour of their facility and show you where everything is located. Many of these staff people are also equipped to answer questions about how to use, set up and adjust the equipment, and even the purpose of each piece.

Don't be afraid to ask questions—there is no such thing as a stupid one. Every pro was once a beginner. When you have an idea of where certain machines and pieces of equipment are located, you'll feel much more comfortable during your workout.

3. Download some good music. Wearing headphones allows you to control what you're listening to, escape into your own little world without being distracted and get in a solid workout. It can also motivate you to work harder—and even zone out. So instead of feeling paranoid that you're being judged by the people around you, you'll be jamming out to your favorite tunes and totally focused on your workout.

4. Relax and do your thing. When people are at the gym, I can promise you that they are more concerned about what they are doing than what you are doing. And if they are thinking about you, they are more worried about what *you* think of *them* than what *they* think of *you*.

So next time you feel upset or paranoid that someone else is judging you, critiquing you or talking about you at the gym, repeat this mantra to yourself: “If someone has a problem with me, it's their problem, not mine.” You're doing something awesome for yourself, and that's all you need to worry about!

5. Grab a friend. Having another person with you in the weight room will give you a sense of familiarity and comfort. With a friend by your side, you can keep each other motivated with friendly competition and words of encouragement. You can spot each other when you want to use heavier weights and give one another feedback on form. You can figure out the machines by putting your minds together. Oh, and you can keep one another accountable for getting to the gym on a regular basis, too. It's a win-win for both of you.

6. Just do it. Sitting around worrying about being uncomfortable at the gym is 10 times worse than actually going to the gym, where there is a 99.9 percent chance that no one will laugh at you. If you let fear control your life, you will continue to live in a teeny, tiny, familiar little box known as your “comfort zone.” And in case you're wondering, that is NOT where the magic happens. The more you “just do it,” the easier and more comfortable you will become.

Take these tips with you next time you hit the weight room. Have a plan, grab some good music or a friend, and just do it! You will be glad you did!

Become a member at www.nicolewilkins.com and follow me along my entire preparation for the IFBB Figure Olympia where I will be training to retain the title for hopefully the fifth time!

Visit www.nicolewilkins.com for full-length workout videos, recipes, meal plans and much more—including Nicole's NEW clothing line! For more information and 2015 locations for PHAT Fitness Camps for women of all ages and athletic abilities hosted by Nicole Wilkins, check out www.getphatwithnicole.com!

Nicole Wilkins is three-time Figure International and four-time Figure Olympia champion, as well as a Met-Rx sponsored athlete and certified personal trainer. For more with Nicole, check out “The Fit Life” series on www.fitnessrxwomen.com. You can also follow Nicole on Facebook, and Twitter: @Nicole Wilkins.



Nutrition... the way nature intended

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GNC
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Nature's Food™ is total-body nutrition that helps you make the most of your healthy, active lifestyle. You watch what you put in your body. That's why Nature's Food™ features hand-selected, plant-based ingredients without preservatives, artificial sweeteners, genetically modified organisms, gluten or dairy. All of our protein products are made with nutrient-rich ingredients, including brown rice protein, and deliver mouthwatering flavor your taste buds and muscles will love. Nature's Food™ – inspired by nature, designed for you.

"Nature's Food™ plant-based proteins include the complete protein source I need before or after working out."

- Claire Rae

*Internationally Published Fitness Model,
Online Trainer, Blogger & Vegan*



■ Plant-Based
Meal Replacement

■ Organic Rice Protein

■ Vegan Protein
Plus Weight Loss

■ Weight Loss
Capsules

It's What's Inside That Counts...

- ✓ Free of soy, gluten and dairy ingredients
- ✓ Plant-based, 100% vegan protein with complete amino acid profile
- ✓ Non-GMO

- ✓ No preservatives, artificial flavors or artificial sweeteners
- ✓ No inferior pea protein like the other guys
- ✓ Great taste



#NATURESFOOD

I HEAR PEOPLE TALK ABOUT USING CASEIN PROTEIN VERSUS WHEY AND I THOUGHT PROTEIN WAS PROTEIN? CAN YOU PLEASE EXPLAIN THE DIFFERENCE? SHOULD I BE USING BOTH?

They are most definitely different and typically used at different times due to their rate of absorption. First off, it may help to understand where whey and casein come from. Whey is a byproduct of the cheese-making process. As milk begins to coagulate to make cheese, the casein protein starts to separate from the whey. As the casein thickens, the whey remains liquid, which then forms two separate proteins. Both are used as protein powders, but whey is absorbed by the body more quickly, while casein is absorbed slowly over time. Due to the different absorption rates, it's best to supplement with a whey protein immediately after a workout for quick absorption to repair muscles and use casein for its sustained protein delivery before bedtime.

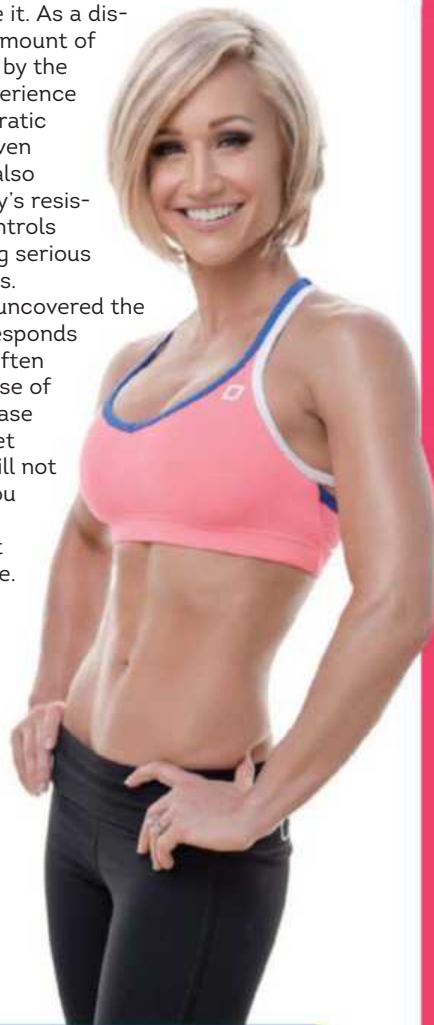
A FRIEND OF MINE STARTED COMPETING LAST YEAR AND NO LONGER WANTS TO GO OUT TO EAT WITH ME. I TELL HER THAT PLENTY OF RESTAURANTS WILL CATER TO HER NEEDS AND CAN MAKE THINGS LOW CALORIE, WITHOUT BUTTER AND OIL, BUT SHE STILL REFUSES TO GO. IS THIS NORMAL OR IS SHE OVER-REACTING?

When a person decides to compete, they have typically decided to go all in with a goal to win. Many competitors will avoid restaurants for fear of the unknown. Your friend may ask for something to be prepared a certain way, but there is no guarantee without her seeing how it's prepared with her own eyes to know exactly what she is getting. The food may not have any added oils or butter, but it's typically prepared on a surface where other foods were made with those things. Also, in the case of chicken, which is often a staple in a competitor's diet, it will likely have been preserved in salted water or marinated, and while that may not add calories, the additional salt could affect their performance in the gym and/or result in water retention. Also, there are some studies and literature that suggest that an otherwise innocent piece of plain grilled chicken breast could contain pesticide-related chemicals such as PCBs that can be endocrine disruptors, causing hormonal changes in the body that boost fat storage. In order to play it safe, a person should choose organic foods whenever possible. While this may seem neurotic to some, a competitor will do all that they can to remove any variables for a potential slip-up. They are constantly thinking that the people that they could be up against aren't doing this or in this case, aren't eating out.

I FOUND OUT SEVERAL MONTHS AGO THAT I HAVE PCOS (POLYCYSTIC OVARIAN SYNDROME) AND WHILE I NOW HAVE SOME UNDERSTANDING AS TO WHY I'VE GAINED WEIGHT, I'M MORE DEPRESSED THAN EVER AND HOPING THAT YOU CAN TELL ME THAT THERE ARE WAYS TO OVERCOME IT.

I'm sorry that you are suffering from PCOS, but happy that you discovered it because it can be one of the most underdiagnosed medical causes of weight gain. PCOS tends to run in families and three out of four women don't even know they have it. As a disorder that increases the amount of male hormones produced by the ovaries, a woman may experience thinning hair, absent or erratic menstruation, acne and even facial hair growth. PCOS also tends to increase the body's resistance to insulin, which controls blood sugar levels, causing serious cravings for carbohydrates. Fortunately, since you've uncovered the culprit, PCOS generally responds well to treatment, which often involves medication, the use of birth control pills to increase estrogen and a healthy diet with regular exercise. It will not happen overnight but if you implement this course of action, your excess weight gain will go down over time.

■



Have a question for Jamie? E-mail it to editor@fitnessrxwomen.com.

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Jamie Eason

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I WANT TO BUILD A WIDER BACK, LATS AND SHOULDERS. WHAT SHOULD MY TRAINING APPROACH BE?

Wow, I don't get this question that often! Nice! Think about adding to the shoulder width, as that is the top of your "V." Heavy(er) lateral raises as well as overhead presses are your best friends here. On the overhead presses, vary your grip from palms forward to neutral (palms in) to make sure you are stimulating the muscles thoroughly. Try to push the weight slightly out at the top— picture that V and mimic it.

As for your lats, pull-ups and pulldowns will win the day— same approach with the hand position and reverse that V as you pull up/down. Imagine your elbows meeting at the base of your spine. They won't, but that's your visual.

For all of these moves, think multiple sets— four to five— and make sure you are taking in adequate calories so your body can build. And don't forget to sleep— that's when the magic happens!

IF YOU DO WEIGHTED OBLIQUE EXERCISES, WILL IT JUST MAKE YOUR WAIST THICKER?

So they say... bearing that in mind, you have to eat and sleep with purpose in order to make anything bigger. If you stay away from the fridge, you won't be built like it. And it's way harder for women, as their testosterone levels average about 10-20 percent of what men average, and that is a necessary component for building. So, I would say stick to the 12- to 20-rep range, not training to failure, and keep your body fat percentage low, and I'll bet you will like what you see when it is unveiled.

SHOULD YOU CONSUME PROTEIN BEFORE YOU WORK OUT OR AFTER, OR BOTH? AND HOW MUCH?

In relatively small quantities, it's consuming some protein a couple of hours pre-workout is recommended, but depending on when you are training (afternoon, if you had lunch three to four hours prior, versus morning— presumably on an empty stomach— your needs will vary). Somewhere between 10-20 grams should do it. You can also/instead take an intra-workout amino powder and shore up the deficit. After your workout, it's mandatory! Studies say between 30-60 minutes after you finish is the most important meal of the day for people who train with moderate to high intensity. Shoot for 30 and you'll be safe! Post-workout, I would suggest 25-35 grams depending on your bodyweight, the source of the protein and your tolerance. Play with the amount until it feels right— that's half the fun of training.

IS IT REALLY NECESSARY TO EAT FIVE SMALL MEALS A DAY? I FIND IT DIFFICULT TO DO THIS BECAUSE I WORK LONG HOURS.

If you dig, and I have dug, you can find studies, nay books, that say yes, and books that say no, or nay. Sorry, I'm on a roll... bottom line is, there are so many approaches to your food intake that you would do yourself a disservice to try to stick with something that patently doesn't fit into your lifestyle. There's intermittent fasting. There's the old-school "three squares." There's three squares and a snack. There's "one meal a day," which my dad does ("I'm like a dog, son!"). Right, dad, but you have a different digestive system and different energy requirements than a dog, but far be it from me to ask you to go fetch that theory. Enjoy your kibble.

My suggestion would be to play around with different approaches until you find what works for you and your lifestyle and that you enjoy. When it stops doing that, try something else. Start enjoying the game of it all and you're automatically a winner!

I NEVER GET SORE WHEN I WORK OUT. DOES THIS MEAN I'M NOT WORKING OUT HARD ENOUGH OR THAT I AM DOING SOMETHING WRONG?

I know it's rude to answer a question with a question, but... do you feel good after your workouts? Do you feel strong, healthy, attractive? In my world, that's way more important than feeling sore. Think about it. Now back to you— if you are desperately seeking soreness, try adding weight to your current movements so that you reach positive failure in the six- to eight-rep range. Stick with that for two to four weeks and see what it does. Then return to your previous methods for a week. Now, just add volume to those previous methods— say two more sets per movement and 10 more minutes of whatever cardio you are doing. Or, switch up your exercises and your sequencing across the board. And? What worked? Whichever it was, rinse and repeat. ■

GOT A QUESTION FOR GUNNAR?
EMAIL IT TO:

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THE BEST SQUATS FOR GLUTE ACTIVATION

Squats are notorious for building strong, athletic backsides. But with so many different squat variations in existence such as goblet squats, box squats, front squats, high bar back squats, low bar back squats, Zercher squats, overhead squats, sumo squats and kneeling squats, many individuals wonder which types of squats they should be performing to maximize glute development.

My Ph.D. thesis happens to revolve around the squat and hip thrust exercises. Please allow me to shed some light on this topic, as I've conducted dozens of electromyography experiments and I know the squat literature like the back of my hand. For these reasons, I'll be sure to include interesting anecdotes in this article in addition to study references.

THE RESEARCH

Two different studies show that wider squat stance widths lead to greater glute activation.^{1,2} One study shows that deeper squats lead to increased glute activity,³ but this is somewhat puzzling, considering that even though the glutes receive a better stretch when going deep, their activation reaches a minimum at the lowest part of the squat.⁴ The squat depth study used the same loads for all three squat depths examined.

I recently conducted a similar study but used 10-repetition maximum loads for parallel and full squats, and the data failed to show a difference between going to parallel and going deeper, since greater loads can be used with the parallel squats. Back squats have been shown to be far superior to overhead squats in glute activity.⁵ Front squats and back squats elicit very similar levels of glute activation.⁶ And finally, counterbalance dumbbell squats have been shown to outperform dumbbell front squats in glute activity.⁷

POINTS TO CONSIDER

There are two important points to think about when considering the research currently available. First, there aren't any studies to date that have examined glute activity during Zercher squats, goblet squats, kneeling squats or box squats. Second, research reports averages. Since we're all anatomically unique, it's on us to find the best types of squats for our bodies. In my EMG experiments, I have found that the kneeling squat leads to the highest levels of glute activity out of any squat variation. This variation has you "sitting back" tremendously, and it also allows for very heavy loads to be used. However, I do not recommend that you rely solely on the kneeling squat for glute development because of the reduced hip range of motion inherent to this movement. Even if muscle activation isn't higher in stretched positions, range of motion is important for maximizing muscle hypertrophy in the squat, so it's important to go deep.⁸

Many of my clients receive the highest glute activation in a squat when they perform Zercher squats. However,

some individuals find Zercher squats to be excruciatingly painful on their arms, which limits the loading they can use. In this case, the Zercher squat should be omitted.

One of my clients does not feel back squats working her glutes very well, even though she can parallel back squat over double bodyweight. Her glutes actually receive markedly higher activation when she performs goblet squats with just 50 pounds. Another client never figured out how to use her glutes very well during a squat until she started performing box squats where she sat back and kept her shins perpendicular to the ground. Another learned how to effectively utilize her glutes during squats by performing banded squats with mini bands around her knees.

EXPERIMENT WITH YOUR SQUATS

So what squat variations do I recommend if trying to maximize glute development? I recommend that you experiment to figure out the types of squats that feel most comfortable for you. I also advise you to always include a variety of squats in your program. You can warm up with banded squats and goblet squats prior to every lower body workout, and you can choose a heavier squat variation to perform for heavy strength work such as front squats or back squats. Finally, don't neglect other excellent glute exercises such as hip thrusts, deadlifts, lunges, back extensions and lateral band walks for comprehensive glute development. ■

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Photos of Ashley Kalfas by Gregory James



I'M PREPARING FOR MY FIRST 5K AND I'M REALLY NERVOUS. WHAT ARE SOME THINGS I SHOULD DO THE MORNING OF THE RACE SO THAT I DO MY BEST?

First, make sure that you get good rest the night before. It is probably a good idea to arrive to the race ahead of time with plenty time to stretch, warm up and get into the zone. If you rush to the race, it will just add additional stress! You should eat a well-balanced, light breakfast containing carbohydrates. For example, one

of my favorite pre-race meals is a half cup of oats with Gaspari Nutrition's MyoFusion Advanced Protein powder mixed in (after oats have been cooked), and I like to top it with a tablespoon of almond butter. I also enjoy a coffee with this meal for a little boost of energy. Before the race, it is important that you have drunk a few bottles of water. During the race it is likely that you will be sweating, so it is very important to stay hydrated. You may want to consider drinking a low-calorie electrolyte beverage before and after your race. It might be a good idea to purchase a small fanny pack to go around the waist. They actually make cute ones now just for runners! This way you can store your keys and phone with you while you run!

DO I NEED TO AVOID DAIRY IN ORDER TO LOSE FAT?

Absolutely not. Unless you have a dairy intolerance, you can most certainly incorporate healthy sources of dairy into your diet. I myself eat Greek yogurt or cottage cheese on a daily basis. Dairy is a great source of protein and calcium!

WHAT ARE YOUR FAVORITE FAT-BURNING SUPPLEMENTS?

I like to use Gaspari Nutrition's Carnipure, which is a natural fat-burning, stimulant-free supplement. When I get closer to my show, let's say a month out, I will take my Detonate XT (also made by Gaspari Nutrition). The closer I am to a competition, the less energy I tend to have. This is because I am doing more workouts and decreasing my calories. Detonate XT is a great spark of energy to get me through my workouts.

HOW DO YOU STAY ON YOUR DIET AT SPECIAL EVENTS? IT SEEMS LIKE ALMOST EVERY WEEK THERE IS A BIRTHDAY OR WEDDING OR SOME EVENT, AND I DON'T WANT TO MISS OUT ON THE FUN AND GOOD FOOD.

Perhaps you can use this special event as your cheat meal. Still try to keep it reasonable, however! Be sure to drink a few glasses of water before you start to eat. This will fill up some space in your stomach, making you feel more full already. Load up on the green veggies first before you eat anything else, followed by proteins. Eat slowly and STOP when you are full.

I'M HAVING TROUBLE DEVELOPING MY CALVES.

ANY TIPS?

Calves can be very tricky to build. This is one of the most genetically predetermined muscle groups. Try working different angles of the calves (toes out, toes in, forward). Perhaps add in an additional calf-training day. You can try pre-exhausting the calves by several minutes of jump roping (using toes only) before the workout. Try new things, new exercises and varied weight. Keep the muscles guessing. ■

Have a question for Ashley? Email it to editor@fitnessrxwomen.com.

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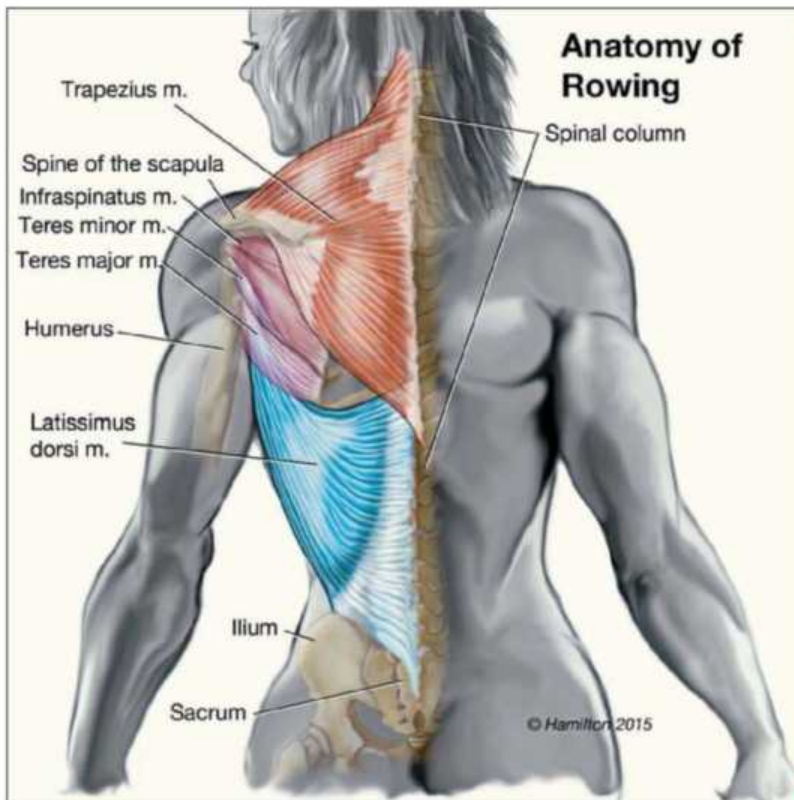
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WOMEN'S HEALTH



Your back is hard to see and evaluate unless you line up a few mirrors and get the right angles for this appraisal. In contrast, your back is very visible to everyone around you, so even though a soft and shapeless back can be most easily handled by selecting wardrobe pieces that drape the shoulders and middle back (out of sight, out of mind), this is not the best approach. Furthermore, the middle back is not something that should be ignored even if you cannot see it well, because you cannot truly have a strong core without a strong back, and no one looks good, even from the front, with rounded shoulders or when slouching.

The general problem with most back exercises is that they are hard to do and require a large amount of energy, so it is tempting to skip them when you are in the gym. Yet having a firm, straight and shapely back is certainly worth the investment in effort and time. Although demanding, there are not many exercises better than rowing.

FIRM YOUR BACK AND IMPROVE YOUR POSTURE With

LOW-SEATED CABLE ROWING

Overview of Muscle Form and Function

Low cable rowing provides an effective activation of all middle back muscles and especially the latissimus, teres major and trapezius muscles, which are all key components of the back musculature.¹ The latissimus dorsi covers most of the middle and much of the lower parts of the back. The lower attachments of the latissimus dorsi includes the thoracic vertebrae, the iliac crest of the hip bones, the lower three to four ribs and the thoracolumbar fascia (a tough connective tissue sheet that covers the lower back). The muscle fibers from all of these areas converge on the upper (superior) portion of the humerus bone of the upper arm close to the shoulder.¹ It forms the majority of the width of the upper back, from

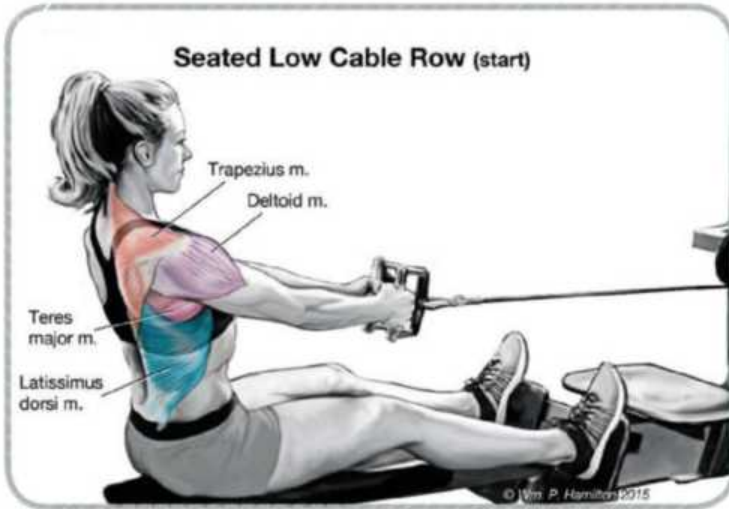
above the hip to the arm pit (axilla). The primary action of the latissimus muscle fibers in low cable rowing is to extend the humerus (to pull the upper arm backward). The lower part of the latissimus muscle has a more direct line of pull with the shoulder flexed (arm forward) and the arm raised a bit above parallel to the floor. The upper fibers of this muscle are more active with the arms raised 45 degrees or more to the floor. While both upper and lower fibers are active to varying degrees in the low pulley row, it is the middle fibers of the latissimus that have a more direct pull with the hands and arms working at mid-chest/upper abdomen level, and this is the angle that you will use in the low cable rowing exercise.

The teres muscle attaches along the medial border of the scapula, and runs

to the same region of the humerus bone as the latissimus dorsi.¹ The teres major muscle extends the humerus from a flexed position and also medially rotates the arm at the shoulder joint. Low cable rows activate the arm extension function of the teres major. As the teres major muscle begins on the scapula bone, it is more effectively activated with the arms at mid-chest level (and is less mechanically active in the exercise with the arm and hand closer to the feet).²

The fibers of middle one-third of the trapezius muscle stretch from the upper thoracic spine, laterally to the posterior side of the scapula and clavicle.¹ In low cable rows, the middle trapezius fibers help to "squeeze" the two scapula bones toward the mid-line of the body (adduction of scapula).³

LOW-SEATED CABLE ROW



1. Sit down in front of the cable station and place your feet on the footplates. Your torso should be at a 90-degree angle from your thighs. Bend the knees just slightly to dissipate the forces away from the hip and sacroiliac joints when you are sitting.

2. Bend forward slightly and grab the cable handle or a "V" bar handle that is attached to the low pulley. Raise the weight stack just slightly and sit up straight. At this point you should be able to feel a stretch across your middle back.

3. Take a breath, and then exhale as you pull the handles toward your torso. Aim to have the hands come to the middle or upper part of the abdomen. Keep the torso stationary. It is important to pull the arms backwards (arm extension) as far as possible to fully activate the teres major and latissimus muscles.¹ Squeeze the shoulder blades (scapula) together when the hands are close to the ribs and the upper abdomen.

4. Control the hands as they return toward the starting position (three to four seconds).

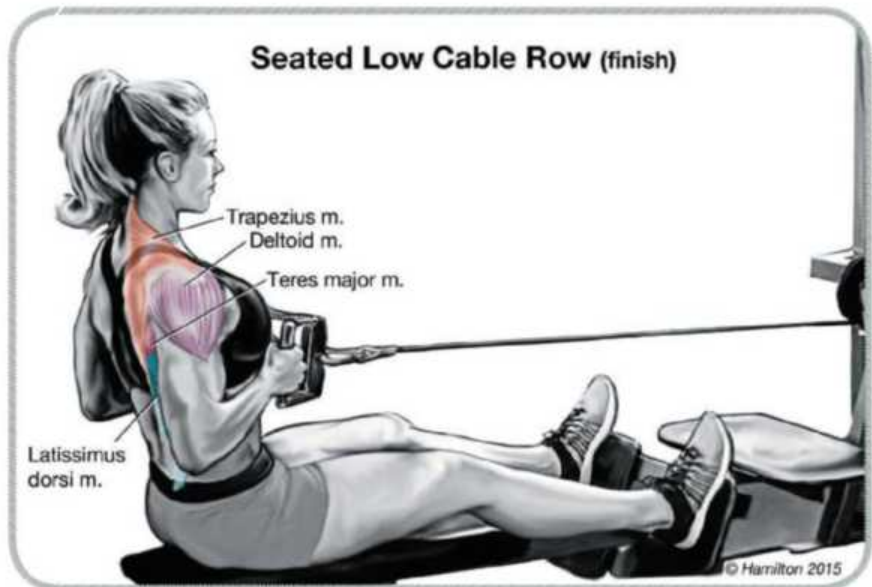
5. At the bottom position, pause to allow the weight to stretch your teres major and latissimus dorsi muscles. Hold the stretched position for three seconds before beginning the next repetition.

Not only are the larger back muscles strongly activated, but other smaller muscles around the scapula are also strongly activated⁴ in part by their contributions to arm extension, and in part by scapular adduction functions.³

As a caution, the purpose of the additional stretch between contractions is to more fully activate the latissimus and teres muscles and not to dislocate your shoulder and damage your rotator cuff. Furthermore, be careful not to turn this into a seated deadlift where you have extensive flexion and extension of the spine, as this could invite injury.

The teres major can be more strongly activated when the hands are pulled to the lower chest or upper abdomen area, whereas the lower latissimus fibers are activated more strongly when the pull comes to the lower on the abdomen, so you can mix up the exercise angles a bit for better overall back action.

With the low cable row, you (or your friends around you) should quickly see changes in your lower and middle back firmness and shape. With that kind of change you will want to go wardrobe shopping for some new open-backed outfits that no longer hide but proudly display your new firm, tight and shapely back. ■



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A **BETTER** WAY TO DO BURPEES

+ Fat-Burning Bodyweight Interval Workout



outside of your hands, be sure to drop your hips down into a

Most trainers and fitness enthusiasts— of all varieties, not just CrossFit athletes— perform the burpee exercise with less-than-optimal form. What do I mean by this? By going down with their feet together and back bent over, they make the movement both less safe and less metabolically demanding than it could be.

So what's the solution? Perform your burpees less like a squat and more like a sumo deadlift. This moves the stress from the back to the hips and legs, which also enables you to work harder.

Here's how to perform the burpee 2.0:

Set up: With your feet slightly wider than shoulder-width apart, hold your arms straight in front of your body so they're hanging between your feet.

Action: With your knees slightly bent and your hips forward, place your hands on the ground with your wrists directly underneath your shoulder and jump your legs backward so you end up in a push-up position. Jump your feet up to the outside of your hands and return to the tall standing position to complete the rep.

Coaching tips:

- Make sure that your body forms one straight line and that you do not allow your hips to sag toward the floor each time you're in the push-up position.
- Each time you jump your feet up to the



squat-type position before you stand up tall.

Of course, you can add a push-up at the bottom of each burpee, if you'd like. You can also add a jump at the top of each burpee if you're looking to make this exercise more dynamic, and want to further increase the metabolic demands.

Now that you understand a better way to perform the burpee, we can talk about how to use this

exercise as a part of a great Tabata-inspired metabolic bodyweight sequence. But first, we must clear up some confusion about Tabata training.

THE TRUTH ABOUT TABATA WORKOUTS

A Tabata interval is a high-intensity interval training protocol originally created by Japanese researcher Dr. Izumi Tabata. Each Tabata interval consists of 20 seconds of high-intensity (as hard as you can go) exercise followed by 10 seconds of rest. This is repeated



for eight rounds, totaling four minutes time.

Contrary to popular belief, the original Tabata interval training study does not measure fat loss. There was no mention of fat loss in the paper at all.¹ Secondly, in the study, Tabatas were done on a bike and performed at 170 percent of VO_2 max. If you don't know, VO_2 max is defined as the highest rate of oxygen consumption attainable during maximal or exhaustive exercise.

TABATA-INSPIRED BODYWEIGHT CIRCUIT

The following circuit uses four different exercises performed two times each.

20 SECONDS SPEED SQUAT (perform the reps as fast as possible)
10 seconds rest
20 SECONDS BURPEES
10 seconds rest
20 SECONDS MOUNTAIN CLIMBER (keep neutral spine)
10 seconds rest
20 SECONDS SPEED SKIPS (in place) (lift knee above hip)
10 seconds rest
20 SECONDS SPEED SQUAT (perform the reps as fast as possible)
10 seconds rest
20 SECONDS BURPEES
10 seconds rest
20 SECONDS MOUNTAIN CLIMBER (keep neutral spine)
10 seconds rest
20 SECONDS SPEED SKIPS (in place) (lift knee above hip)

You can use this Tabata-inspired circuit up to three times per week as a "finisher" after strength training.

As exercise intensity increases, so does oxygen consumption. That said, a point is reached where exercise intensity can continue to increase without an associated rise in oxygen consumption.

With this reality in mind, even if Tabatas are effective for fat loss and conditioning, which other scientific evidence on interval training tells us that they probably are due to their high-intensity nature,^{2,3,4} using resistance training or bodyweight training modalities to perform them likely won't enable you to reach 170 percent of VO_2 max on every set, if at all. So, sequences that use resistance training or bodyweight training, like the one provided in this article, are "technically" not a true Tabata. Instead, they are "Tabata-inspired" because they use the same interval framework of 20 seconds of high-intensity (as hard as you can go) exercise followed by 10 seconds of rest, repeated for eight rounds, totaling four minutes time.

Also, traditional Tabatas consist of one exercise: the bike. However, when performing a Tabata-inspired circuit using resistance training or bodyweight training, there are three

reasons why better options allow you to rotate between multiple exercises:

1. When you only use one exercise such as squats for the entire Tabata, the legs gradually fatigue with each working set. This centralized leg fatigue reduces the overall intensity of the Tabata.

2. Using more than one exercise prevents centralized muscle fatigue and helps you maintain the same high level of intensity in each round.


3. Mixing in more than one exercise boosts the overall metabolic demand because it involves more muscles. Put simply, more muscles worked means greater energy demand, which in turn means faster fat loss.

Plus, doing the same exercise eight times for four minutes straight is just plain boring. The workout is already challenging, why make it monotonous, too? ■

Nick Tumminello is the owner of Performance University in Fort Lauderdale, Florida. He's also the author of the book *Strength Training for Fat Loss* and the DVD by the same name. For more information visit www.NickTumminello.com.

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Fat-Loss Metabolism: THE DIETER'S DILEMMA

ON AN INDIVIDUAL LEVEL, SOME PEOPLE SEEM TO BE “SPENDERS” AND OTHERS “SAVERS” WHEN IT COMES TO CALORIE INTAKE, FAT MASS AND ENERGY EXPENDITURE.

Are you a spender or a saver? Responsible parents teach their children to save at least part of what they earn to build a nest egg, or buy something special later— if you get a bonus or unexpected windfall, don't spend it all, save some. Aesop's Fables had a tale of the ant and the grasshopper where the grasshopper would have died over a harsh winter, since he ate everything as soon as he saw it. His grace came from the generosity of the ant that labored and saved, storing food for hard times.

These are important lessons, handed down by survivors who made it through periods of famine or depression. The human body learned these lessons while sitting on stones, amazed at the power of fire. If you get energy (calories), save some (store it as fat) for a

certain period of famine some time in the future. If you are in a famine, stop burning as many calories as you do in “good times.” When the harvest comes in or a hunt is successful, gorge on the food, but don't get wasteful with the calories by upping the metabolism any higher than necessary. Of course, just like with money, some bodies pay close attention to this lesson while others are living on “metabolic credit” and burning calories like fireworks in the eyes of those who can't shed excess fat.

On an individual level, some people seem to be “spenders” and others “savers” when it comes to calorie intake, fat mass and energy expenditure. Most people know of someone who eats miserly amounts, counting each calorie like a pauper counts pennies, and yet,

the pounds just keep piling on, and no diet ever seems to work more than a couple weeks. Then there is the grasshopper— not the cool kind like David Carradine portrayed in the television series “Kung Fu,” but the ever-slim glutton who can eat his/her fill and more, yet remain lean.

For the metabolic “savers,” things just seem to get worse after a diet. It seems as though the body's metabolism has gone from burning calories to just having them smolder. This may account for some of the “yo-yo” dieting experienced by many people.¹ Is it a myth that some fail at diets or regain weight because of a metabolic shift to “saving?” Or is there a physiologic explanation, with evidence at the molecular and genetic level?

THE THRIFTY PHENOTYPE

Researchers have debated the existence of the “thrifty phenotype” for decades.² Of course, dieters have long been aware of the fact that some people have a metabolism that immediately turns sluggish the minute they order a salad instead of a cheeseburger. It is like the mitochondria and fat cells have become wired for sound and can hear the words “Splenda” or “dressing on the side” and order a work halt.

But the term “thrifty phenotype” means more than feeling that the metabolism is sluggish; it is something that can be measured and proven. Everyone’s metabolism slows down when calories are dropped considerably, say by 30 to 45 percent of maintenance calories. In other words, if you normally need 2,200 calories a day just to maintain your weight, then dropping your daily calorie intake to 1,210 to 1,540 calories per day will make your body adjust down its resting energy expenditure (roughly equivalent to the basal metabolic rate).³ Many trainers and dietitians use a standard formula to determine maintenance calories, which fits about as good as any “one-size-fits-all” item (it works for everyone kind of, and nobody well). Of the more than 200 formulas, the (now revised) Harris-Benedict equation is likely the best known, though not necessarily best for many populations.⁴

However, there appears to be a divide, in that some people only adjust their metabolism down slightly when dieting, while others do so to a much greater degree. The difference can be around 20 percent of the 24-hour energy expenditure (how many calories are burned the entire day) based on rodent studies, but nearly 50 percent when adjusted for weight.⁵ In other words, when the calories were cut to just more than half of the original maintenance calories, obese “thrifty” rats burned only as many calories as “normal” rats that weighed half as much, on the same relative calorie restriction. These findings were supported by a study in humans that showed a greater reduction in free T3 and free T4 (thyroid hormones) and greater insulin; resting energy expenditure (metabolism) tended to remain “slowed” in those who regained weight, though the result was not statistically significant.³ Adding insult to injury, when “thrifty” dieters stop their diet and return to normal eating, even adjusted for their new (hopefully lower) bodyweight, their metabolism doesn’t rev back up. Instead, they discover that their “maintenance calorie demand” is much lower than the “spenders” who turn up the heat (literally and figuratively) once they start re-feeding.

So, “thrifty” dieters may already be heavier, and more likely to fail in dieting using standard calculations, as they have a lower starting “maintenance” calories, and as soon as they begin to cut their calories, the body seemingly self-sabotages and pulls back the throttle on the metabolism. This makes weight loss slower and more difficult. Further, once “thrifty” dieters begin eating normally again, weight rebounds rapidly as their metabolism does not respond to the return of calories to burn. Instead, any extra calories over their comparably lower metabolic demand is more easily stored as fat.

LOW BIRTH WEIGHT AND POOR NUTRITION

Before looking more closely at the results of a controlled study in humans, consider the current understanding of the “thrifty phenotype” hypothesis. From its inception, this theory was inspired by the discovery that low birth weight babies born from mothers with poor nutrition were “skinny fat” because they had as much fat as normal-weight babies, but less lean mass. Also, these infants were born insulin resistant, with high leptin and insulin, as well as low adiponectin. This hormone combination presentation is the same seen in obese pre-diabetic adults. During fetal development (before the baby is born), the fetus is responding to the environment as it senses it through the mother’s circulation. If the mother eats poorly, then the fetus enters a survival mode, and the metabolism of that developing person is programmed to preserve calories and energy.⁶ This is done to ensure that vital organs, especially the brain, receive adequate nutrition first and foremost. This programming is inserted into the lifetime response for the fetus, and persists into adulthood—possibly even being passed on to later generations. It is an example of epigenetics.^{6,7}

Of course, psychologist Sigmund Freud would have had a celebration, given that this is something that could be blamed on one’s mother. Of course, women living in impoverished areas have zero choice in the matter, trying their best in most cases to provide for their child or children. However, even in prosperous countries, such as the U.S., poor nutrition is still rampant among the socio-economically challenged. There may be “food” and plenty of calories, but the nutritional value of the typical diet for many is lacking in many vital micronutrients—especially a pregnant woman/teen. »

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EFFECT ON WEIGHT LOSS

A paper just published in the journal *Diabetes* followed a group of people, after determining with considerable precision and effort not only their basal metabolic rate, maintenance calories, sleeping energy expenditure, response to one-day caloric restriction (50% of maintenance calories) and one-day overfeeding (200% of maintenance calories).⁸ Activity was also measured using five sensors placed on the limbs and trunk. This initial set of determinations occurred in a tightly controlled environment, where not only were activity and food controlled, but also the ambient temperature. For nearly two weeks, the group adjusted to this setting. They were obese, but otherwise healthy, and not allowed to exercise for the duration of this study (11 weeks total). The baseline measurements were determined twice for accuracy, the second occurring after the maintenance calories were shown to maintain weight within 1 percent of the initial weighing. Very rigorous and demanding study for the subjects and researchers.

Then, the subjects spent six weeks in the same controlled environment, but were placed on a diet providing only 50 percent of maintenance calories. As might be expected, all the subjects lost weight, however, there was a very clear divide. During the initial phase, certain subjects were found to rapidly and dramatically lower their 24-hour energy expenditure (total number of calories burned during the day), and they did not “turn up” their metabolism or activity as much when overfed. Others were seen to only drop the 24-hour energy expenditure a bit, and when they were overfed, their metabolism revved up on a supercharger.

When the data was analyzed comparing those who were “thriftiest”—in other words, they slowed down their metabolism most when calorie restricted and didn’t waste calories by burning them when overfed—there was a clear difference. While all groups lost weight—after all, they were eating only half as many calories as they required—the “thriftiest” did not lose as much weight.

Then, the subjects were placed back on a maintenance calorie diet for another two weeks, and re-tested to see how they responded to calorie restriction or overfeeding after losing weight. Again, it was found that the “thriftiest” displayed a disadvantage in regards to weight loss. Their maintenance calories were lower than what

the calculated value would be based upon weight, fat mass and fat-free mass.

An interesting observation is that both groups, “thriftiest” and “spenders,” had pretty much the same sleeping energy expenditure, meaning that the basal metabolism wasn’t necessarily revved up in the “spenders.” Instead, the 24-hour energy expenditure was higher. While those losing the most weight were also the least sedentary, that difference did not account for the majority of the weight lost. In addition to potential hormonal changes previously noted in earlier studies (thyroid hormone, leptin, insulin, etc), the authors speculated that diet-induced thermogenesis may account for some of the difference. Brown fat is a heat-producing tissue that is activated by the sympathetic nervous system, cold environments and food intake. The building was temperature-controlled, and the subjects were sedentary and not allowed access to thermogenic drugs or supplements. So, the authors feel it may be possible that the “spenders” have more brown fat and burn calories with meals that the “thriftiest” would save. Unfortunately, they did not measure brown fat, so that is guesswork— but reasonable.

POINTS TO CONSIDER

Two findings that were interesting: those who are less likely to benefit from dieting-based weight loss can be identified before the diet begins, and the weight lost in sedentary people who only cut calories to lose weight is about 50:50 fat and muscle. At least, this is true for a severe caloric restriction diet.

If you are a spender, you probably are pretty successful dropping weight when you need to, and when you binge eat, feel your body heating up. If you are a saver, it is not a pre-destined failure. Instead, it could be advance notice that more aggressive tactics are required than just cutting calories. Hopefully, readers are not cutting calories down to 50 percent of maintenance (50% carbohydrate, 30% fat, 20% protein was used in the study). Further, this demonstrates the need for higher protein and resistance exercise when attempting to lose fat weight.

Perhaps, the research looking at brown fat activation, even transplantation, may level the playing field one day between “spenders” and “savers.” ■

RESVERATROL: BROWN FAT ACTIVATOR

FOR A LONG TIME, WINE WAS NOT JUST A DRINK FOR CELEBRATION OR A SAFE BEVERAGE IN TIMES WHEN CLEAN WATER WAS NOT A CERTAINTY. IT WAS ALSO MEDICINE. IN FACT, ETHANOL (ALCOHOL) IS STILL USED IN MANY MEDICINES, THOUGH PRIMARILY TO DISSOLVE OTHER MEDICINES— THESE ARE CALLED ELIXIRS.

HOWEVER, RED WINE HAS BEEN SHOWN TO CONTAIN NUMEROUS CHEMICAL COMPONENTS THAT MAY PROMOTE HEALTH AND POTENTIALLY EVEN LONGEVITY. OF COURSE, THIS IS ASSUMING THAT IT IS CONSUMED RESPONSIBLY AND IN MODERATION. AMONG THESE HEALTHY COMPONENTS, PERHAPS THE MOST STUDIED IS RESVERATROL. EARLY STUDIES REPORTED THAT AN IMPORTANT ENZYME CALLED SIRT1 WAS ACTIVATED BY RESVERATROL, AND WAS FELT TO BE RESPONSIBLE FOR PROLONGING THE LIFESPAN OF YEASTS AND RODENTS BY IMPROVING MITOCHONDRIAL HEALTH, AMONG OTHER EFFECTS.

NOW, ANOTHER STUDY HAS SHOWN RESVERATROL, AND POSSIBLY OTHER POLYPHENOLS CONTAINED IN FOODS LIKE BLUEBERRIES, GRAPES AND STRAWBERRIES, MAY HAVE FAT-REDUCING POTENTIAL BY “BROWNING” WHITE FAT. BROWNING MEANS THAT STORAGE FAT CELLS ARE TURNED INTO FAT-BURNING CELLS THAT DUMP FAT INTO HEAT PRODUCTION. IN TERMS OF SCIENCE, IT WAS A VERY ELEGANT STUDY SHOWING CHANGES IN THE GENES ACTIVATED AND INCREASES IN PROTEINS AND ENZYMES RESPONSIBLE FOR BREAKING DOWN STORED FAT AND WASTING IT AS HEAT. FAMILIAR PATHWAYS SUCH AS PGC-1 α , UCP1 (UNCOUPLING PROTEIN) AND OTHERS WERE ELEVATED. THIS IS THE SAME PROCESS THAT OCCURS WHEN COLD EXPOSURE CAUSES WHITE FAT CELLS TO “BROWN.”

FURTHER, IT WAS SHOWN THAT THESE EFFECTS WERE CAUSED BY A RESVERATROL-INDUCED INCREASE IN THE ENZYME PATHWAY AMPK- α 1, THE PATH STIMULATED BY THE DIABETES DRUG METFORMIN. AMPK- α 1 IS ALSO INCREASED IN KETOGENIC DIETING, MAKING IT INTRIGUING TO DISCOVER A NUTRITIONAL METHOD THAT MAY OFFER SIMILAR BENEFITS IN AN ACHIEVABLE QUANTITY OF FOOD. THE AMOUNT OF POLYPHENOL-RICH FOODS THAT WOULD NEED TO BE CONSUMED APPEAR TO BE ON THE ORDER OF ROUGHLY 12 OUNCES OF BERRIES, GRAPES, ETC.

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KEEP IT SIMPLE

"This program is for people who don't know where to start, have hit that plateau, or have a specific deadline for an event; whether it's a **PHOTO SHOOT, MOVIE SCENE, TRAINING CAMP, WEDDING, SCHOOL REUNION...whatever!**"

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DIVINE NUTRITION: NATURAL BLEND PROTEIN POWDERS



FIND YOURSELF SEARCHING FOR THE RIGHT PROTEIN SUPPLEMENT FOR YOU? WITH SO MANY PROTEIN POWDERS ON THE MARKET, IT CAN BE DIFFICULT TO CHOOSE WHAT TO SPEND YOUR HARD-EARNED MONEY ON. SO WHAT'S A GIRL TO DO?

Lucky for us fit gals, Divine Nutrition has come out with a line of natural protein powders that are great for pre- or post-workout, as a meal replacement, or even just as a snack to help with your sweet tooth cravings (which, to be honest, is what we loved the best about this line!). These nutrient-packed protein powders come in some delicious flavors—some of the best we've ever tried.

Let's take a look at these protein powders and what's inside.

A 100 PERCENT NATURAL BLEND

Divine Nutrition says a goal of the company is to manufacture goods to fit every individual's needs— from top level athletes to those just trying to maintain a healthy diet. We love that Divine Nutrition protein powders contain high-quality natural ingredients, such as cross flow micro filtered protein isolate— which is high in protein and calcium but low in fat, sugar and lactose— stevia and natural flavorings. These products also contain the essential branched-chain amino acids (BCAAs) to really promote lean muscle and recovery.

Though it's important to know what Divine Nutrition carries within their products, it is also important to know what they don't have. Divine Nutrition's Natural Blend line contains NO artificial colorings, artificial flavorings, artificial preservatives, aspartame, binders, corn syrup, chemicals, corn, dextrose, dyes, diluents, egg, fructose, flavor enhancers, glucose, glucose polymers, gluten, hormones, maltodextrin, stimulants, sugar, sugar alcohols, sucrose, sucralose, soy salt, trans fat or wheat!

So when we tried these protein powders, we felt good— not only *physically refreshed* with a shake from Divine after

tough weight-training sessions, we also felt good just knowing that what we were drinking contained high-quality ingredients. While you certainly can use a blender, we found that these protein powders dissolved very easily in just a shaker cup, making them very convenient!

NUTRIENT PACKED AND GREAT TASTING

This Natural Blend line is high in protein (25 grams, and the protein is actually from grass-fed cows, and the filtration process utilized removes the majority of the fat, lactose and cholesterol), low in carbohydrates (2 grams), low in fat (.5 grams) and sugar free. These natural ingredients provide 50 percent of the recommended protein allowance, which ultimately delivers a superior taste that is enjoyable to gulp down! In addition, the grass-fed whey protein is easy to digest.

Divine Natural Blend protein powders come in a variety of flavors that will really excite your taste buds: Vanilla Dulce de Leche, Strawberry, Chocolate Dulce de Leche, Caramel Corn, Cinnamon Bun and Vanilla Peanut Butter. We especially loved the Caramel Corn and Chocolate de Leche, but you can't go wrong with any of these flavors; these protein powders are great for staying on track and satisfying your sweet tooth all at the same time.

So, the next time you're on the run and have no time to cook up breakfast, or you want a full post/pre-workout drink, try Divine Nutrition and we promise you, you won't be disappointed!

For more information and to order, visit www.divinenutritionproducts.com.

MORE FROM DIVINE

Divine Nutrition has also a few other great products worth checking out, including "Trans-Form," an extreme fat burner that is meant to speed up the process of burning fat, controlling your appetite and increasing energy and focus. Check out their website for more details! ■

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TREADMILL TRENDS

TREADMILLS ARE NOT NEW— HOWEVER, HERE'S A LOOK AT TWO RECENT TRENDS THAT PUT A SPIN ON THE TRADITIONAL TREADMILLS WE ARE SO USED TO SEEING IN GYMS AND AT HOME.



MANUAL TREADMILLS ▼

TREADMILLS WITHOUT MOTORS— THIS MAY BE A STRANGE CONCEPT FOR SOME WHO HAVEN'T ALREADY SEEN THESE POPPING UP AROUND THE GYM. BUT, IT'S HAPPENING. MANUAL TREADMILLS ARE APPEARING IN HIGH-END HEALTH CLUBS AND EVEN AT THE CROSSFIT GAMES, AND PEOPLE ARE REALLY STARTING TO GET CURIOUS.

ACCORDING TO *THE WALL STREET JOURNAL*, MANUAL TREADMILLS HAVE BEEN AROUND FOR A WHILE. HOWEVER, THE NEWER VERSIONS TODAY ARE LIKE NOTHING WE HAVE SEEN IN THE PAST, AS THE NEWER VERSIONS ARE MADE FOR COMMERCIAL USE. IN ADDITION, INSTEAD OF HAVING A THIN BELT, THE NEWEST MODELS HAVE RUBBERIZED OR SYNTHETIC SLATS ON THEIR RUNNING SURFACES.

HOW DOES IT WORK? THESE MANUAL TREADMILLS TYPICALLY HAVE A SLIGHTLY CURVED TREAD SURFACE. THE FRONT AND BACK ENDS OF THE TREAD ARE ARCHED UPWARD, USING GRAVITY TO HELP ACCELERATE AND BRAKE WHEN THE USER IS DOING THEIR DAILY TREADMILL ROUTINE. THE BELT ACCELERATES WHEN USERS MOVE TOWARD THE FRONT OF THE TREAD, AND THEN SLOWS DOWN WHEN THEY MOVE

TOWARD THE BACK. BUT WHEN THE USER DECIDES TO STOP, THE BELT STOPS. INSTEAD OF PRESSING A BUTTON TO START AND FOLLOWING THE SPEED OF THE MECHANICAL CONVEYOR BELT, USERS ARE NOW IN CONTROL OF THE MACHINE. BY SIMPLY MOVING THEIR FEET, THE BELT MOVES. THE TREADMILLS EVEN CLAIM TO BURN UP TO 30 PERCENT MORE CALORIES, SINCE THEY REQUIRE THE EXERCISER TO USE THEIR OWN ENERGY.

ACCORDING TO RECENT NEWS REPORTS, MANUAL TREADMILLS ARE ON THE RISE IN FUNCTIONAL TRAINING AND BOUTIQUE GYMS THAT HAVE SMALLER SPACES, BECAUSE MANUAL TREADMILLS TEND TO BE SMALLER AND DON'T NEED POWER STRIPS OR OUTLETS.

IN ADDITION, SOME PEOPLE SAY THEY FEEL SAFER USING THE MANUAL TREADMILLS, ACCORDING TO *THE WALL STREET JOURNAL*, BECAUSE WITH A MANUAL TREADMILL THERE IS NO FEAR OF FLYING OFF THE BACK OF IT.

WHILE MANUAL TREADMILLS COST ABOUT \$6,000, WHICH IS MORE THAN OR ABOUT THE SAME AS MOTORIZED TREADMILLS, AN ADVANTAGE IS THAT THEY DON'T HAVE A MOTOR THAT CAN BREAK DOWN, REPORTS *THE WALL STREET JOURNAL*. ("TREADMILLS UNPLUGGED," *THE WALL STREET JOURNAL*; JULY 7, 2015).

THE TREADMILL DESK— IS IT REALLY EFFECTIVE? ▼

When you work full time, it can be difficult to find the time to exercise. This is why some people combine exercise and work with a treadmill desk— which is exactly what it sounds like.

But according to *The New York Times*, this may not be the best idea. A new study found that attempting to exercise while working may have negative effects on your working skills. In the study, researchers at Brigham Young University randomly assigned 75 healthy young men and women, who had never used a treadmill desk before, to work spaces either with a chair or a treadmill desk, which was set to a speed of 1.5 miles per hour with no incline.

The participants were asked to complete some tasks that tested their manual and mental dexterity. The manual task involved typing words that flashed onto the computer screen and the cognitive tests measured memory, delayed recall and concentration. It was found that people sitting at the desks performed better at these tasks. In fact, the treadmill desk users performed worse on almost everything, including concentration, memory and typing.

Michael Larson, a professor of psychology and neuroscience at Brigham Young University, told *The New York Times* that it's possible that if people repeatedly use a treadmill desk, they may get better at these skills as they become more accustomed to it. So if you do decide to try out a treadmill desk for yourself,

understand that there will be an adjustment period. Otherwise, you might be better off saving the cardio session for outside the office. ("A Treadmill Desk Balance," *The New York Times*; June 16, 2015) ■



FLAT ABS WITH IFBB BIKINI PRO JANET LAYUG

IFBB Bikini Pro Janet Layug knows a thing or two about ab training. After all, she is a top Bikini competitor, most recently placing second at the 2014 Olympia and winning the first-ever Arnold Australia earlier this year. Now she's getting ready to take the stage at the 2015 Olympia this September.

Want to achieve flat abs of your own? Follow Janet's top tips, try her workout and check out her diet to start sculpting those abs today!

JANET'S TOP TIPS FOR FLAT ABS:

1. DRINK LOTS OF WATER. "Typically about a gallon a day is what I consume. It helps me stay hydrated, full and satiated, keeping me away from foods that could hinder the ab diet."

2. WATCH NOT ONLY WHAT YOU EAT, BUT ALSO HOW MUCH. "The saying 'abs are made in the kitchen' is true, to an extent. You have to eat the right foods in combination with cardio and ab exercises to get the best results. The trick is consuming fewer calories than you burn. We all have abs; it's a matter of losing the layer of fat covering them. Lowering your caloric intake will help boost your fat loss."

3. CHOOSE THE RIGHT CARBOHYDRATES. "Carbs get a negative rep when talking fat loss. The truth is carbs are good for you and will aid in developing a nice six-pack. Stay away from the fast-digesting starchy carbs such as sugars, white breads, sodas and even sports drinks. Those will spike your insulin, signaling your body to switch processes from fat burning to fat storage. Instead, choose complex carbs like sweet potatoes, oatmeal, brown rice and whole wheat. I like to eat my carbs in the morning and early afternoon, leaving me with energy for the rest of the day."

4. MIX IT UP. "Choose a variety of abdominal exercises. There are many out there and one is no greater than the other. However, it's important to stimulate all the different abdominal muscles. Keep in mind your workout should be modified to what your body can handle and not compared to others. Changing up your workout routine will keep your body from adapting to the same exercises and give you the ultimate results for great ab definition!"

5. CARDIO. "Yes, you have to incorporate cardiovascular exercise in addition to eating right and toning your abs. Whether it's a low intensity, high intensity or fasted type of cardio, it will melt the fat off just in varying degrees."

6. STAY CONSISTENT. "It may take a little longer to see results depending on where you are at now, but a little bit each day goes a long way. The last thing you want to do is go hard for a few days, then splurge, ruining the progress made. Stay positive and keep your goals in mind."

MY ABDOMINAL WORKOUT

HANGING LEG

RAISES: 4 sets, 15 reps

Hang on a bar and lift legs slightly above horizontal.

SCISSOR LEG

KICKS: 4 sets, 30-45 seconds

Lie down on a bench. Reach arms behind you and grab bench. With a slight bend at the knees, lift your legs up about six inches by engaging your abdominal muscles. This is the starting position. Now lift your left leg up to about a 45-degree angle while your right leg is lowered until the heel is about two to three inches from the bench plane. Then, switch by raising your right leg up and lowering your left leg. Repeat in a brisk but controlled motion, keeping abs tight.

AB TWISTS ON STABILITY BALL: 4 sets, 30 reps

With your upper back on the stability ball and your knees bent 90 degrees, rotate your torso back and forth. Keep shoulders on ball and feet flat on the floor.

PLANKING: 45 seconds, 50 seconds, 60 seconds, to failure

DIET FOR A DAY

BREAKFAST: 4-egg-white omelette with spinach, tomato and onion, one-half cup precooked oatmeal with cinnamon, hot green tea and Gifted Nutrition Superlean fat burner.

MORNING SNACK: Gifted Nutrition ISO whey protein shake vanilla and handful of nuts or a spoon of organic peanut butter.

LUNCH: 5 ounces of grilled chicken with low-sodium seasonings, one-half cup of brown rice and mixed veggies.

AFTERNOON SNACK: Cucumber, tomato and onion salad and 4 ounces of lean steak grilled.

DINNER: 6 ounces of grilled cod or tilapia, broccoli and cauliflower mix and small salad with walnuts.

KEEP UP WITH JANET

For more tips and motivation from Janet, follow her on Twitter (@janetlayug), Facebook (JanetLayug) and Instagram (janetlayug). Janet can be contacted for appearances through www.fmg-fitnessmanagementgroup.com.



CROSSFIT *VERSUS* WEIGHT TRAINING

Which is Better for Increasing Lean Muscle and Improving Physical Fitness?

Cross training programs attempt to develop well-rounded fitness by including exercises that build cardiovascular and respiratory endurance, stamina, strength, flexibility, power, speed, coordination, agility, balance and accuracy. The appeal behind high-intensity cross training programs is that the workouts are short, intense and produce fast results.

Mike Smith and colleagues from Ohio State University found that 10 weeks of CrossFit-based power training triggered substantial improvements in maximal oxygen consumption and body composition in men and women of all fitness levels. Aerobic capacity increased an average of 12 percent, while fat decreased by nearly 20 percent. Canadian researchers found that high-intensity interval training (HIIT) on a stationary bike increased muscle oxidative capacity (citrate synthase) by almost 50 percent, muscle glycogen by 20 percent, and cycle endurance capacity by 100 percent. The subjects made these amazing improvements exercising a mere 15 minutes in two weeks.

Follow-up studies showed that interval training increased whole-body and skeletal muscle capacity for fat use during exercise. A study from the University of Georgia led by Nicholas Gist found that performing four sets of burpees at maximum intensity for 30 seconds followed by four minutes rest produced a physiological load that was similar to HIIT workouts on a stationary bike.

The Downside of Cross Training

Level 1 certification for CrossFit requires that potential trainers attend a weekend workshop and pass a short test of CrossFit principles. Cross training includes a wide variety of exercises, including the Olympic lifts and complicated gymnastic movements. These skills take years to master. Many cross training instructors are highly motivated, knowledgeable and dedicated. Others, unfortunately, haven't got the training or experience to teach these complicated exercises to beginners. Skill levels among cross training instructors have improved in leaps and bounds as the sport has matured and become more popular. Nevertheless, people should not jump into complex Olympic lifts without proper training and adequate practice.

Some biomechanists, such as Stuart McGill from Canada, feel that high-speed sit-ups and squats damage the spine. Excessive cross training can lead to overtraining—an imbalance between training and recovery. While beginning cross trainers exercise every other day, more experienced people train three days straight followed by one day of rest.

Technique in complex lifts such as squats and snatches breaks down rapidly during high-rep workouts. Cross training programs typically involve performing high reps of three to five exercises as explosively as possible. A University of Connecticut at Storrs study led by David Hooper and Bill Kraemer found that squat biomechanics deteriorated during a 55-rep squat workout. Hip involvement decreased with fatigue, which placed greater loads on the knee joint and spine. These changes diminish the training effect of the exercise and increased the risk of injury.

A basic philosophy of most cross training programs is that you are only fit if you perform well in 10 areas of fitness. Movement is highly specific. Sports science pioneer Franklin Henry from the University of California, Berkeley developed the principle of specificity of training in the 1950s. His studies showed that movements are highly specific, which means that skill development is unique to a given movement performed at a given speed. Motor control studies from UCLA showed that practice reinforces motor patterns in the brain. These patterns are specific to each movement. There is no general coordination, agility, balance and accuracy. The balance required in skiing is different from the balance required to stand on one foot or do tricks on a skateboard.

The nature of random cross training workouts makes it difficult to develop high levels of skill in Olympic lifts and gymnastics. Untrained people performing high-rep snatches, cleans and overhead squats a few times per month will not develop high levels of skill in these movements without concentrated practice.

Using Weight Training Principles to Improve Cross Training Programs

An alternative to random high rep cross training programs is to combine the best of cross training with tried-and-true weight training principles using fewer exercises, fewer reps and more rest days. This will allow you to retain the varied routines of high-intensity cross training workouts, while performing fewer reps, training fewer days and doing fewer exercises.

SAMPLE WORKOUT

MONDAY

SQUATS: 5 sets of 5 reps, one-minute rest between sets.

BURPEES: 4 sets of 10 reps with 30 to 60 seconds between sets.

HANG SNATCH: 4 sets of 5 repetitions with two minutes rest between sets.

STATIONARY BIKE: 4 to 6 sets of 30 seconds at 100 percent of maximum and two minutes rest between sets.

WEDNESDAY

PUSH PRESSES: 5 sets of 5 repetitions at 70 to 80 percent of one-repetition maximum, one-minute rest between sets.

OVERHEAD ROCK OR SHOT THROWS: 10 repetitions of overhead throws using a heavy rock or shot (shot put).

KETTLEBELL SWINGS: 4 sets of 20 reps with one-minute rest between sets.

TRACK SPRINTS: 4 sets of 200 meter sprints on a track at maximum speed, walking 200 meters between sets.

FRIDAY

BENCH PRESS: 5 sets of 5 repetitions at 70 to 80 percent of one-repetition maximum, one-minute rest between sets.

BUNNY HOPS: 4 sets of 10 reps of bunny hops (repeated standing long jumps).

KETTLEBELL SNATCH: 4 sets of 10 reps, 30 to 60 seconds rest between sets.

ARC OR ELLIPTICAL TRAINER: 6 sets of one minute at 100 percent of maximum effort.

Performing fewer exercises at predictable times will help you develop better skills in complex movements that will increase the safety and effectiveness of training. Doing fewer repetitions per set will help you maintain good form during the workout, which will reduce the risk of injury.

DESCRIPTION OF EXERCISES

SQUATS: REST THE BAR ON THE BACK OF YOUR SHOULDERS AND HOLD IT IN THAT POSITION WITH YOUR HANDS. KEEP YOUR HEAD UP AND SPINE NEUTRAL. SQUAT DOWN (UNDER CONTROL) UNTIL YOUR THIGHS ARE APPROXIMATELY PARALLEL WITH THE FLOOR AND BUTT IS ABOUT ONE INCH LOWER THAN THE KNEES. ACTIVELY ENGAGE THE HIP FLEXORS BY HINGING AT THE HIPS INSTEAD OF THE BACK. DRIVE UPWARD TOWARD THE STANDING POSITION, KEEPING YOUR BACK IN A FIXED POSITION THROUGHOUT THE EXERCISE. A GENERAL STRATEGY FOR THIS LIFT IS TO GO DOWN SLOWLY AND UP QUICKLY.

PUSH PRESS: FROM A STANDING POSITION WITH THE BAR AT CHEST LEVEL (CLEAN THE BAR OR TAKE FROM A RACK), BEND YOUR KNEES AND THEN DRIVE THE BAR OVERHEAD USING YOUR ARMS AND LEGS. RETURN THE BAR TO THE STARTING POSITION.

BENCH PRESS: LYING ON A BENCH ON YOUR BACK WITH YOUR FEET ON THE FLOOR, GRASP THE BAR WITH PALMS UPWARD AND HANDS ABOUT SHOULDER-WIDTH APART. LOWER THE BAR TO YOUR CHEST, AND THEN RETURN IT TO THE STARTING POSITION.

BURPEES: THIS IS A FIVE-PART EXERCISE DONE AS RAPIDLY AND EXPLOSIVELY AS POSSIBLE. STAND UP STRAIGHT AND REACH FOR THE CEILING. SQUAT DOWN AND PLACE YOUR HANDS ON THE FLOOR IN FRONT OF YOU. DRIVE YOUR FEET BACKWARDS UNTIL YOU ARE IN A PUSH-UP POSITION. IMMEDIATELY DRIVE YOUR KNEES FORWARD SO THAT YOU ARE AGAIN IN A SQUAT POSITION WITH YOUR HANDS PLACED ON THE FLOOR IN FRONT OF YOU. JUMP UP AS HIGH AS YOU CAN, EXTENDING YOUR ARMS OVERHEAD. REPEAT THIS EXERCISE AS FAST AND AS EXPLOSIVELY AS YOU CAN.

OVERHEAD ROCK OR SHOT THROWS: USE A ROCK OR KETTLEBELL WEIGHING BETWEEN 12 AND 60 POUNDS. STAND, FACING AWAY FROM THE LANDING AREA, WITH FEET A COMFORTABLE DISTANCE APART. HOLD THE ROCK IN BOTH HANDS WITH ARMS EXTENDED. SQUAT SLIGHTLY AND LOWER THE ROCK BETWEEN THE LEGS. DRIVE UPWARDS AND THROW THE ROCK BACK OVER THE HEAD AS FAR AS POSSIBLE. RETRIEVE THE ROCK AND REPEAT.

BUNNY HOPS: DO THIS EXERCISE ON A TRACK, FOOTBALL FIELD OR GYM FLOOR. START WITH THE FEET COMFORTABLY APART. DO 10 CONTINUOUS TWO-FOOTED JUMPS (I.E., STANDING LONG JUMPS) WITHOUT PAUSING BETWEEN JUMPS.

HANG SNATCH: BEGIN WITH THE BAR IN THE HIGH HANG POSITION (ABOVE THE KNEES) OR THE LOW HANG POSITION (BELOW THE KNEE CAPS), HIPS BACK, ARMS AND BACK STRAIGHT AND KNEES BENT. BEGIN THE LIFT WITH THE SECOND PULL. EXTEND THE HIPS AND KNEES VIGOROUSLY, SHRUG YOUR SHOULDERS, AND DRIVE WITH YOUR FEET, AND THEN DROP UNDER THE BAR (THIRD PULL), AND CATCH THE BAR OVERHEAD WITH THE KNEES BENT SLIGHTLY. RETURN THE BAR UNDER CONTROL TO THE FLOOR OR TO THE HANG POSITION.

TWO-ARM KETTLEBELL SWINGS: BEGIN BY HOLDING THE KETTLEBELL IN BOTH HANDS WITH PALMS FACING TOWARD YOU, IN A STANDING POSITION WITH KNEES BENT, FEET PLACED SLIGHTLY MORE THAN SHOULDER-WIDTH APART, HIPS FLEXED, BACK STRAIGHT, CHEST OUT AND HEAD IN A NEUTRAL POSITION. HOLDING THE KETTLEBELL AT KNEE LEVEL, SWING THE WEIGHT TO A HORIZONTAL POSITION BY INITIATING THE MOTION WITH THE HIPS, THIGHS AND ABS (TIGHTEN THE QUADS, GLUTES AND AB MUSCLES AS HARD AS YOU CAN), KEEPING YOUR ARM STRAIGHT AND RELAXED DURING THE MOVEMENT. LET THE WEIGHT SWING BACK BETWEEN YOUR LEGS IN A "FOOTBALL HIKING MOTION" AND THEN REPEAT THE EXERCISE. DURING THE MOVEMENT, HINGE AT THE HIPS AND NOT AT THE SPINE.

KETTLEBELL SNATCH: BEGIN BY HOLDING THE KETTLEBELL IN ONE HAND WITH YOUR PALM FACING TOWARD YOU, IN A STANDING POSITION WITH KNEES BENT, FEET PLACED SLIGHTLY MORE THAN SHOULDER-WIDTH APART, HIPS FLEXED, BACK STRAIGHT, CHEST OUT AND HEAD IN A NEUTRAL POSITION. HOLDING THE KETTLEBELL AT KNEE LEVEL. SWING THE WEIGHT TO A HORIZONTAL POSITION BY INITIATING THE MOTION WITH THE HIPS, THIGHS AND ABS (TIGHTEN THE QUADS, GLUTES, AND AB MUSCLES AS HARD AS YOU CAN), BENDING YOUR ARM AS IT APPROACHES THE CHEST AND CONTINUING THE MOTION UNTIL STRAIGHTENING IT OVERHEAD. THE KETTLEBELL SHOULD ROTATE FROM THE FRONT OF YOUR HAND TO THE BACK DURING THE MOTION. USE AN UPWARD PUNCHING MOTION AT THE TOP OF THE MOVEMENT TO PREVENT INJURING YOUR FOREARM. LET THE WEIGHT SWING BACK BETWEEN YOUR LEGS IN A "FOOTBALL HIKING MOTION" AND THEN REPEAT THE EXERCISE. DURING THE MOVEMENT, HINGE AT THE HIPS AND NOT AT THE SPINE. ■

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YOGA and MEDITATION

WITH U.S. WOMEN'S SOCCER STAR CHRISTEN PRESS

How the Practices Have Improved the Athlete's Performance and Well-being



ussoccer.com/ISIPhotos

Photo: Kathy Cacicedo

For soccer star Christen Press, it was a dream come true to be part of the U.S. women's national team this year when they won the World Cup. In addition to the national team, the 26-year-old forward also currently plays for the Chicago Red Stars and maintains a rigorous training schedule. But much of Christen's success and happiness, she says, is due in part to her regular yoga and meditation practices.

Christen has been practicing yoga four to six days a week and meditating twice daily for about the last three years. In fact, in 2012 Christen became frustrated with soccer and even considered giving it up, but she says learning to meditate, as well as playing soccer in Sweden and living abroad, helped to change her life. "My game transformed. I was a different person. I felt different on the field and I was a different player," she said.

LISA: What is a typical meditation session like?

CHRISTEN: You can't meditate wrong. You can't be bad at it. It is incredibly hard to commit yourself ... to sit down and take a break from the business and the bustle of life. So once you do, and you do carve that space out, you have a mantra... and you just repeat your mantra in your head. ... During your meditation your thoughts infiltrate, and you start thinking about what you're having for breakfast, did you do enough training for soccer ... the key is to understand that that's part of the meditation. Part of the meditation is training your body to understand that you will have those thoughts— you can't necessarily control them all the time, but you can give them less power to dictate your life. You usually do it right when you wake up in the morning, and I try to do it right after practice.

LISA: As an athlete, how has meditating affected your life?

CHRISTEN: If I missed a shot, I was replaying it in my head, or if someone missed a pass, I was thinking about that, and that was distracting from what was happening in the current moment on the field. I've learned through meditation that if I'm more affective at letting go of what just happened in the game and if I stay more present on the field, I'm extraordinarily better.

LISA: What are some of your favorite yoga moves?

CHRISTEN: I really enjoy the balancing series when you go from tree pose to half moon. I enjoy it because it's the most challenging part, it's the part where I feel my stability growing and my muscles working really hard.

LISA: You haven't had any major injuries so far. Do you think that yoga has played a part in that?

CHRISTEN: One hundred percent. That's why I started doing it a long time ago, ... I have a funny posture on and off the

field and I was told I need to elongate my hamstrings, I need to elongate my hip flexors, and I need to work on my core strength ... and I think yoga does those three things especially well, and I always focus on them during my practice. I think the worst injury I have had was chronic back pain. It's never been so bad that I haven't been able to play, and I absolutely think that the yoga has been able to manage it.

LISA: In what other ways do you think yoga has helped you improve as an athlete?

CHRISTEN: The same qualities as meditation... that commitment, being present. Learning how to breathe and expanding my breathing capacity has been huge for my endurance. ... And translating the properties and the aspects of yoga into my lifting regimen. I'm lucky I have a great athletic trainer that I've worked with for a long time who is very into yoga and he's incorporated yoga moves into my weightlifting.

LISA: Can you give an example of how to do that?

CHRISTEN: Usually if we're supersetting the exercises, he adds a fourth exercise— just a yoga pose. We'll go from downward dog into a low lunge, then back, then into a groin stretch, then back ... then do the other side. ... With the yoga moves incorporated, it keeps the muscles strong and healthy while they are being strengthened.

LISA: During your season, where would yoga fit into your schedule?

CHRISTEN: I usually do yoga after practice, but it does depend on which kind of yoga I am doing. One day is always a recovery type yoga, and I definitely do that in the evening after practice. If it's a flow, I can do it before or after depending on how hard I think the training is going to be. Usually on Monday, I'll look at my training schedule and see which days and which yoga works best.

LISA: Do you think yoga is being embraced by more athletes these days?

CHRISTEN: Absolutely. ... On the national team, three or four times a week we have a yoga class that's optional. So the national team is getting into it and the more they do it, the more they love it. I have girls who think this is the best hour of their day when we go there as a team. ... I do think it's something that's spreading all over sports.

LISA: Do you ever combine your yoga and meditation practices?

CHRISTEN: I might do the yoga practice and then stay in the room and meditate for 20 minutes directly after and I think that's when you can get into the deepest meditation, because yoga is actually a practice that was designed to set you up for meditation. ■

LEAN-EFX™

WE ALL KNOW WHAT IT TAKES TO SEE RESULTS— HARD WORK IN THE GYM DAY IN AND DAY OUT. IT'S ABOUT GOING TO THE GYM ON THOSE DAYS WHEN MAYBE YOU DON'T FEEL LIKE IT, when you are a little extra tired but you push anyway. Consistency and dedication breed results.

Of course, training and nutrition are of upmost importance when it comes to seeing results. But supplements can help us get there and give us that little extra push, especially when you are working so hard and sticking to your nutrition plan but still can't seem to lose that last bit of weight. This month, we tried out the weight-loss **Lean-EFX™** from Formutech Nutrition, and we weren't disappointed with the results.

HOW IT WORKS

Lean-EFX™ is meant to help reduce body fat while increasing energy and even enhancing your mood and reducing appetite. This product works well at achieving all three. So while you are increasing your fat-burning potential, you are also increasing your energy for those cardio sessions. Taking one capsule when you wake up, as recommended, really sets you up to burn fat and helps you get through those morning training sessions! We loved having the energy to do our morning cardio training sessions, leaving us feeling great for the rest of the day! In addition, the weight-loss benefits are amazing, especially when you just need that little extra help to lose the last few pounds.

SEE RESULTS

While this product does work well at increasing energy and enhancing mood, it doesn't leave you with a jittery feeling. It's just enough energy to get through that workout session, which is what you want. In addition, once you are done there is no crash, which is sometimes a side effect with products that are meant to enhance energy. So you can enjoy all the benefits *without* the side effects!

Plus, a big one for us was appetite suppression. While training hard is something we love to do and can



stay consistent with, sticking to a healthy diet can sometimes be challenging. And the problem is, this is one of the most important areas when it comes to reaching your fitness goals. You can work out every day, but if your diet is not on point, you can forget about seeing any results. But you know how it goes—you are good on your diet all day long and then suddenly the evening hits and you just want a piece of chocolate. We found that **Lean-EFX™** did a phenomenal job of keeping us on track with our healthy eating plan by reducing appetites and cravings, helping us stick to our healthy foods and avoiding the temptations.

LONG-LASTING EFFECTS

With many fat burners, you need to take several doses throughout the day, but this is not the case with **Lean-EFX™**. It works so well that just one dose taken in the morning lasts throughout the entire day. So you have the energy to work out and go through your busy day, you decrease your cravings and you're burning fat at the same time! We loved this product and encourage you to give it a try for yourself to really catapult your results.

For more information and to order, visit formutechnutrition.com. ■



Becoming A Fitness JEDI

USING MINDFULNESS AND INTUITION FOR FITNESS SUCCESS

The ultimate goal with fitness shouldn't be to live your life tied down to a super strict meal plan, living on chicken and broccoli, avoiding tempting social situations and/or training militantly with little enjoyment. That feels stifling and is not really facilitating your best health and life.

Instead, the goal should be to train yourself to live healthfully and in alignment with your fit life values— without having to obsess. You can then trust that you'll make wise decisions using your inherent knowledge. I call this becoming a Fitness Jedi. To reach this point, though, there is much training to be done. To help us get there, I called upon the wisdom of perhaps the greatest Jedi of all:

"You must unlearn what you have learned." – Yoda

The first step to becoming a Fitness Jedi is to break old unhealthy habits and install new ones. To do so, you must fully commit to a nutrition and training plan, BUT you should not just follow it blindly. Staying engaged in the process and learning what works for you builds the foundation for your fit life future.

Use mindfulness to assess how you actually feel while you are eating certain foods, when you feel hungry or full, energy levels, how certain exercises feel, etc. For example, during my first contest diet, I realized that I love fish and green beans. I always felt energetic, satisfied and satiated after that meal. Eight years later, I still eat and enjoy that combo daily.

In addition to learning what works for you, staying mindful also helps you to recognize the benefits of your new behaviors so they can solidify into good habits. For example, acknowledging how your energy multiplies after a workout will help you get out of bed and to the gym rather than snoozing through your alarm.

"Do or do not. There is no try." – Yoda

It is so difficult to establish new habits if you are wishy-washy about it. You must fully commit with your head AND your heart. When you think about why you want to change, it should fire you up. "To lose weight" isn't motivating enough. However, "Feeling confident in my own skin" or "Being able to

play with my grandkids" are much more powerful. So, dig deep for your real reason WHY, then get moving and don't look back.

"Fear is the path to the dark side." – Yoda

We've all been there before. Worrying about how vacation would set you back, if you might come unglued at a special event, etc. In effort to control one of these fear-inducing situations, we often create unrealistic expectations of ourselves like vowing to do two-a-days throughout a vacation or slashing calories drastically during an injury recovery. Guess what happens when we do this? We make ourselves miserable worrying about it and/or our fears become a reality. This is not the Fitness Jedi path, which leads me to...

"Already know you that which you need." – Yoda

At some point on our fitness journey, we must take off the training wheels and realize we can continue to live fit without perfect conditions or following an inflexible plan. We must trust our innate wisdom— the intuition that will set us on the right course if we just tap into it. The Jedis call it "the force."

It took me a while to build up that self-reliance. After retiring from competition, I initially felt anxiety if I couldn't execute my nutrition and training precisely as outlined. But, I realized it was only a crutch, and I began to trust myself to guide my fitness by listening to my hunger, energy, body aches, etc. I do still love having a coach at times to challenge me, but I know I can keep this fitness thing going on my own. And so can you. Build your fitness foundation, learn what works for you and then trust yourself to flourish no matter the situation. May the force be with you!

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MAGNUM LIMITLESS®

WHEN YOU ARE AT THE GYM AND HITTING THE WEIGHTS OR CARDIO, YOU WANT TO DO YOUR BEST. WE ARE ALL BUSY AND HAVE TO MAKE THE MOST OF THE LIMITED TIME THAT WE HAVE TO EXERCISE. SO SOMETIMES, YOU NEED A LITTLE EXTRA BOOST TO HELP YOU GET THROUGH THAT WORKOUT. THAT'S WHY WE DECIDED TO TRY MAGNUM LIMITLESS®—THE NEWEST PRODUCT FROM MAGNUM NUTRACEUTICALS.

A WINNING FORMULA

The ingredients in Magnum Limitless® are university studied and clinically proven, so you know that you are getting the best. In fact, the ingredients are 100 percent pharmaceutical grade. This product is formulated with key ingredients, such as the scientifically validated trimethylglycine (betaine anhydrous), which has been shown in research to increase strength and power. Magnum Limitless® also contains CaroSyn® beta alanine, which has been shown to increase endurance by removing factors that cause fatigue and pain, and it can also make muscles stronger.

Other winning ingredients include:

- **Creatine pyruvate:** This is the fastest absorbing form of creatine and is more soluble than creatine alone, which means it takes much less to do the job, and it helps to increase endurance.
- **L-citrulline:** This amino acid helps increase muscle energy, improve stamina and recovery, prevent fatigue and more.
- **Myristica fragrans extract:** Helps support the adrenal glands, increasing vitality and improving the ability to deal with stress. It's also been shown to improve concentration and mental alertness.

These are only a few of the active and effective ingredients in Magnum Limitless®. Plus, the two-tiered, time-release flavor systems mean that it tastes *amazing*. We especially loved the Fearless Fruit Punch with Peach Kicker, but there is also the Brazen Black Cherry with a Grape Kicker!



LIMITLESS ENERGY AND INTENSITY

Magnum Limitless® is taken just 20 minutes before working out and the effects are felt almost immediately. This powerful formula is one of the best pre-workouts we have ever tried, not only providing the intensity and energy needed for cardio and weight training sessions, but effects last for several hours—without a crash at all! Having such intense energy at the beginning of the workout also left us more motivated to complete the workouts, which we enjoyed as well.

We loved that this product provided the energy to power through workouts without leaving us with an over-stimulated feeling. In addition, while the effects did last a few hours, it didn't seem to affect our sleeping schedule at all. This product did what it was intended to do—provide intense energy, strength, speed and more—without any of the adverse side effects that sometimes occur with pre-workouts.

TRY IT TODAY!

If you want to take your workouts to a whole new level and have the energy, drive and focus to get through that tough workout session, then you'll definitely want to include Magnum Limitless® as part of your regular supplement stack. Once you try it you will wonder how you ever trained without it! For more information and to order, visit, hardmagnum.com. ■



MULTIVITAMINS:

Adverse Health Effects From Iron, Copper, Manganese and Calcium

A healthy diet includes the correct amount of essential vitamins and minerals that sustain many important biochemical processes within the body, promoting normal bodily function and overall good health. Unfortunately, the modern diet is typically nutrient-deficient—meaning most people do not consume the daily requirement for many of these essential vitamins and minerals, increasing the risk for several life-threatening diseases.¹

In an attempt to address this nutritional shortcoming, the multivitamin was designed to provide many of the required vitamins and minerals to promote better health. However, recent scientific evidence indicates that many multivitamin products on the market today might actually impede overall health by supplying an excessive amount of certain minerals such as iron, copper, manganese and calcium, leading to increased oxidative stress. The accumulation of oxidative damage caused by too much mineral intake then triggers an immune response, which promotes a chronic state of inflammation.

Chronic inflammation—unlike acute inflammation, which protects and heals the body following physical injury or infection—is not beneficial. In fact, chronic inflammation is involved in a number of disease states. For instance, chronic inflammation in fat cells is closely related to the development of insulin resistance and type 2 diabetes.² Similarly, chronic inflammation can damage the coronary arteries, promoting cardiovascular disease³, or stimulate the initiation of cancerous tumors.⁴

CHRONIC DISEASE AND EXCESS IRON, COPPER AND MANGANESE

One of the minerals that appears to contribute most potently to the disease state is iron, especially when taken excessively. Iron is an essential trace element, typically found in the body bound to protein molecules, where it facilitates numerous biological processes essential for life. While we need iron to be healthy, too much iron intake

apparently overwhelms the body's storage capacity, resulting in inflammation and ultimately chronic disease.

Iron is found in the body in two forms; one form is bound to the prosthetic heme group while the other is in a free form, unbound to heme. The free form of iron can be harmful because it reacts with other compounds in the body, producing free radicals that can cause irreparable oxidative damage to key components of the cell including proteins, lipids and DNA.

Because of the potential harm caused by the free form of iron, when inside the cell, the free form of iron is stored inside a protein called ferritin, which prevents the unwanted release of iron to avoid oxidative damage. In fact, studies have shown that increased dietary iron intake increases cellular levels of ferritin to provide greater storage capacity for the additionally ingested iron. However, quite unexpectedly, the greater ferritin levels caused by iron intake also trigger inflammation⁵, increasing the risk for obesity⁶, diabetes^{5,7} and even Alzheimer's disease.^{8,1} This is likely because higher ferritin levels function as a signal to the body that a lot of iron is around. So, the body responds to this signal by activating the immune system, which has the unique capacity to prevent the release of iron from the primary iron-storage site, the liver. So, essentially, the body is doing its best to lower serum iron levels by activating the immune system, despite the fact that this could lead to chronic inflammation and disease. Furthermore, inflammation from too much iron intake may also be due to iron intake exceeding the storage capacity of ferritin, resulting in the release of free iron into the cell, causing additional oxidative damage and inflammation.

As a result, the use of iron-containing supplements doesn't seem to be such a good idea, as this will likely lead to excessive iron intake—especially considering that most individuals already consume generous amounts of iron from the diet, as many common foods are heavily fortified with iron such as cereals, bread and pasta. So supplementing a diet loaded with iron-fortified foods will probably lead to the consumption of too much iron, which may cause the aforementioned increases in oxidative stress, inflammation

and disease.

Comparable to iron, the element copper also generates oxidative damage, particularly in neurons—making too much copper intake unhealthy. In fact, evidence shows that ingestion of copper from supplement pills, along with a high-fat diet, contributes to the onset of Alzheimer's disease.⁹ This study also showed that serum copper levels were elevated in patients with Alzheimer's disease, and higher copper levels correlated with loss of cognition. In addition, copper accumulation in certain tissues has been associated with certain pathologies including cancer, as copper can contribute to the growth of certain cancers while increasing cancer metastasis in other forms.^{10,11}

Excessive consumption of the element manganese has also been identified as a health risk, as accumulation of manganese in the central nervous system promotes neurotoxicity—resulting in the neurological brain disorder

because of its apparent ability to improve bone health. Calcium is also required for many other essential bodily functions including nerve function, muscular contraction and the regulation of certain hormones.¹⁶ As a result, most multivitamins contain a considerable amount of the daily recommended allowance for calcium.

However, a few recent studies indicate that calcium supplementation may not be as beneficial to bone health as once thought, and may actually be detrimental to cardiovascular health. The first report states that while calcium may slow bone loss to some degree, there is no significant reduction in fracture prevention.^{14,17} In a second report by the National Institutes of Health, it was shown that calcium supplements, not dietary calcium, increased the risk of death from cardiovascular disease.^{12,18}

In closing, the use of multivitamin supplements loaded with inflammatory-inducing minerals appears to be counterproductive with respect to one's health, as extraneous amounts of these minerals may result in disease instead of good health, especially when taken over longer periods of time.

Advanced Molecular Labs' (AML) **THERMO HEAT MULTI** is the first multivitamin and mineral supplement formula without iron, copper, manganese and calcium. For more information, go to advancedmolecularlabs.com.

For most of Michael Rudolph's career he has been engrossed in the exercise world as either an athlete (he played college football at Hofstra University), personal trainer or as a research scientist (he earned a B.Sc. in Exercise Science at Hofstra University and a Ph.D. in Biochemistry and Molecular Biology from Stony Brook University). After earning his Ph.D., Michael investigated the molecular biology of exercise as a fellow at Harvard Medical School and Columbia University for over eight years. That research contributed seminally to understanding the function of the incredibly important cellular energy sensor AMPK—leading to numerous publications in peer-reviewed journals including the journal *Nature*. Michael is currently a scientist working at the New York Structural Biology Center doing contract work for the Department of Defense on a project involving national security. ■

Scientific evidence indicates that many multivitamin products on the market today might actually impede overall health by supplying an excessive amount of certain minerals.

manganism. In addition, elevated serum levels of manganese have been found in different neurodegenerative diseases, including Parkinson's disease^{12,13,14}, where manganese has been shown to promote the production of the abnormal protein aggregates called Lewy bodies that apparently contribute to Parkinson's disease.

Manganese's deleterious influence on health is likely due, in part, from oxidative damage within the body, as manganese can also generate free radicals in a similar fashion to iron and copper. Manganese also tends to accumulate in specific cells in the brain called the astrocytes, causing them to malfunction. Since the astrocyte normally provides essential nutrients to neurons, malfunction of the astrocyte prevents the required nutrition for the neuron, thus depleting neuronal function and promoting neurodegeneration.¹⁵

TOO MUCH CALCIUM INCREASES CARDIOVASCULAR RISK

Calcium intake has been promoted for quite some time,

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Just *BEET IT* For Improved Performance

In the back of the produce section, hidden behind sections of beautiful bright, shiny vegetables, in an array of eye-popping Crayola-crayon colors, there's an unassuming, misshapen dusty-looking vegetable that can catapult your training and support heart and artery health at the same time. Consider beets nature's perfect sports and heart-friendly food wrapped up in one sweet—though unusual looking—package.

Beets are special because they contain more nitrates than their neighbors in the produce aisle— green leafy vegetables including spinach, kale and celery. When you eat nitrate-rich foods, the bacteria on your

tongue convert about 20 percent of dietary nitrate to nitrite, which enters the bloodstream where it is converted to a small signaling molecule called nitric oxide. Nitric oxide controls blood flow and many metabolic processes. Increased nitric oxide production causes blood vessels to expand, increasing blood flow to working muscles. Think of your blood vessels like a garden hose. If you can open that hose even wider, more water will flow through it. In terms of blood vessel expansion, “the increase in blood flow improves the delivery of oxygen and nutrients to active muscles, and the removal of metabolic by-products that can interfere with muscle contraction and have an adverse effect on performance. In addition to improving the delivery of glucose to the muscles through better blood flow, nitric oxide also increases glucose (sugar) uptake by the muscle cell,” states John Ivy, Ph.D., Professor Emeritus, Department of Kinesiology and Health Education, College of Education at The University of Texas at Austin. Blood glucose is a major source of fuel for working muscles.

But the benefits of nitric oxide don't stop there. It also expands airways, making breathing easier. In addition, our

cells become more efficient at producing ATP, the fastest source of energy for muscle contraction. Greater ATP production translates to improved speed and explosive power. “Nutrients that we take in through our diet such as carbohydrates and fats are broken down and the energy released from the breakdown of these fuels is used to make ATP in the presences of oxygen. As nitric oxide levels increase, less oxygen is required to produce ATP reducing the oxygen cost of exercise,” says Ivy. And therefore, along with greater ATP production, less energy is required to sustain the same level of effort while you are working out. And finally, nitric oxide may improve recovery between training sessions and allow you to exercise at a higher intensity before fatigue sets in.



Go Red for Heart Health

Dietary nitrates from beetroot juice and green leafy vegetables have other, more profound, benefits for your body aside from affecting your training and sports performance. Consistent intake can help lower blood pressure and improve blood vessel functioning. Research also shows dietary nitrates may improve artery health by decreasing inflammation, platelets clumping together (a step in the formation of blood clots) and artery stiffness (stiff arteries do not easily expand to accommodate increases in blood flow, which may occur when blood pressure increases). With aging we aren't able to produce as much nitric oxide, which may make regular consumption of nitrate-rich foods even more important to support nitric oxide levels in the body.

Don't Confuse Beets with Similar Sounding Compounds

Though beets and therefore beetroot juice are nitric oxide boosters, you won't want to confuse them with another nitric oxide booster— L-arginine. Beets and other nitrate-rich vegetables work through the nitrate-nitrite-NO pathway—one that functions when oxygen isn't as readily available and therefore when you are sucking wind during a fitness class or doing intervals while spinning. L-arginine works through a very different nitric oxide boosting pathway, one that requires the presence of enzymes and oxygen and therefore isn't effective when you are exercising at a very high intensity.

Beets and other vegetables rich in dietary inorganic nitrate

are also not the same as nitrite salts (typically sold over the Internet), which can be harmful, even deadly in low doses. Also, organic nitrates and nitrites are totally different than the inorganic nitrates found in beets and green leafy vegetables. Organic nitrates and nitrites are potent vasodilators (substances that open blood vessels) found in the drugs nitroglycerin and amyl nitrite and should only be prescribed and used under the care of a medical doctor.

How Much is Enough?

Research studies show 16 ounces of beetroot juice (equivalent to approximately 300-500 mg nitrate) consumed daily, three hours before exercise, for a period of several days will effectively increase your body's production of nitric oxide so you notice a benefit while training. According to a few research studies, single doses of beetroot juice won't make a dent in your training.

If you are loading up on beets, keep in mind that you need the bacteria in your mouth to convert nitrates to nitrites, the very first step in nitric oxide production. If you use antibacterial mouthwash or antibiotics, you'll kill both bad bacteria and good bacteria and therefore make significantly less nitrite. Of course, you shouldn't stop using a prescribed antibiotic without your physician's consent, but antibacterial mouthwash might be optional, so talk to your dentist.

Keep in mind that the amount of dietary nitrate intake varies in beets (as well as other vegetables) based on growing conditions, including the nitrate content of fertilizer used, the level of nitrate in the water supply, soil conditions, time of year and how the vegetables are stored. “There are commercial

products on the market that are made from different vegetables that claim to have high nitrate, but they aren't. Consumers need to do their homework if they are looking for a commercial source of dietary nitrate," says Ivy.

Though vegetables rich in nitrates are considered safe for healthy individuals, they may turn your urine and stools red (don't worry, this is harmless). However, people with pre-existing cardiovascular disease should of course tell their cardiologist about any dietary changes they plan to make, since certain foods can interact with specific prescription drugs. For instance, while green leafy vegetables are rich in good nutrition and contain nitrates that are important for cardiovascular health, they contain a good amount of vitamin K, a nutrient that can interfere with some blood thinning medications.

You can't go wrong by picking up those oddly shaped red, yellow and orange bulb-looking veggies tucked away in back of your produce aisle. Beets are a good source of the B vitamin folate and contain more dietary nitrates than any other vegetable. When consumed regularly they may improve your training and also support cardiovascular health. ■

BEETS: DELICIOUS ANY WAY YOU SLICE THEM!

BEETS ARE A VERY VERSATILE FOOD— THEIR SWEET, EARTHY FLAVOR BLENDS WELL WITH A VARIETY OF FOODS AND THEY CAN BE ENJOYED RAW (SHRED THE PULP AND ADD IT TO A SALAD), ROASTED, SAUTÉED, BRAISED (I.E. BOILED), PICKLED AND JUICED.

BEETS WILL STAIN YOUR HANDS AND ANYTHING ELSE THEY TOUCH. SO EITHER USE DISPOSABLE KITCHEN GLOVES WHEN YOU'RE HANDLING THEM OR JUST BE AWARE THE PALMS OF YOUR HANDS WILL BE STAINED RED. WASHING YOUR HANDS RIGHT AWAY WILL OF COURSE MINIMIZE SOME OF THE STAINING BUT DEFINITELY WON'T WASH IT ALL OFF. ALSO KEEP IN MIND THAT EATING BEETS MAY STAIN YOUR URINE RED (ANOTHER HARMLESS SIDE EFFECT).

ROASTED BEET SALAD

MAKES 3 SERVINGS

THE SWEET TASTES OF BEETS BLENDS WELL WITH THE PEPPERY BITE OF ARUGULA.

INGREDIENTS:

6 BEETS (ANY COLOR)
ARUGULA, APPROXIMATELY 4-6 CUPS
2 TBSP. AGED BALSAMIC VINEGAR
2 TBSP. EXTRA VIRGIN OLIVE OIL
FETA CHEESE

DIRECTIONS:

PREHEAT OVEN TO 400 DEGREES. SLICE OFF THE TOPS AND

BOTTOMS OF THE BEETS AND DISCARD. PEEL THE SKIN OFF WITH A VEGETABLE PEELER. CUT BEETS IN 1- TO 1.5-INCH CHUNKS. PLACE BEETS IN A BOWL AND TOSS WITH OLIVE OIL TO LIGHTLY COAT. COVER A BAKING SHEET WITH FOIL AND PLACE CUT BEETS ON THE FOIL-LINED SHEET. ROAST FOR 35 TO 40 MINUTES, TURNING OVER TWICE SO THEY COOK EVENLY AND ARE TENDER THROUGHOUT. REMOVE FROM OVEN AND LET COOL. PLACE ARUGULA ON EACH PLATE AND TOP WITH BEETS. SPRINKLE AGED BALSAMIC VINEGAR ONTO BEETS AND TOP WITH FETA CHEESE.

BEET ORANGE JUICE

MAKES 2 SERVINGS

INGREDIENTS:

2 BEETS
3 NAVEL ORANGES
GINGER IF DESIRED

EQUIPMENT:

BLENDER OR FOOD PROCESSOR
FINE MESH STRAINER OR CHEESE-CLOTH
VEGETABLE PEELER
KNIFE
PANCAKE FLIPPER OR SPATULA

DIRECTIONS:

SLICE OFF THE TOPS AND BOTTOMS OF THE BEETS AND DISCARD. PEEL THE SKIN OFF WITH A VEGETABLE PEELER. CUT BEETS INTO QUARTERS OR SLICES IF YOU HAVE A HEAVY-DUTY BLENDER (VITAMIX

OR BLENDETEC FOR EXAMPLE). OTHERWISE, DICE BEETS (THEY ARE HARD SO MAKE SURE YOUR BLENDER OR FOOD PROCESSOR CAN HANDLE THEM). PEEL ORANGES AND PLACE IN BLENDER OR FOOD PROCESSOR WITH DICED OR CUT BEETS ON TOP. IF YOU ARE INCORPORATING GINGER INTO YOUR SHAKE, PEEL IT, CUT IT AND PLACE ON TOP OF BEETS. BLEND OR PROCESS UNTIL LIQUEFIED. PLACE A CHEESE-CLOTH OR FINE MESH STRAINER OVER A BOWL AND POUR THE JUICE OVER IT. PUSH REMAINING PULP ON TOP OF THE CHEESE-CLOTH OR STRAINER DOWN WITH THE BACK OF A PANCAKE FLIPPER OR SPATULA TO GET AS MUCH JUICE AS POSSIBLE INTO THE BOWL. DISCARD THE REMAINING PULP AND POUR YOUR JUICE INTO A GLASS OVER ICE AND ENJOY!

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7 Health Benefits of Resistance Training

Resistance training is most often associated with appearance— and rightfully so, since resistance training helps you to develop muscle. Muscle creates the shape of your body. So, when you talk about “toning,” “enhancing” or “shaping” certain areas of your body, what you’re really talking about is muscle. Put simply,

you can’t build a perkier, rounder or sexier anything without building muscle. And, although you can’t spot reduce, you certainly can use targeted resistance exercise to spot enhance.

With those facts established, it’s no surprise that it’s the physical appearance related benefits of resistance training

that are most often highlighted, because an athletic-looking body is something almost everybody wants. But, what about the improved general health benefits of resistance training? In this article, I’m going to share seven very important health benefits of using resistance training as regular physical exercise.

1. WEIGHT MANAGEMENT

In addition to its potential effectiveness in the prevention and treatment of “metabolic syndrome,” regular use of resistance training can help to make improvements in body composition.^{1,2} You don’t have to be a cardiologist to know that carrying extra body fat (i.e., being overweight) can place more stress on your heart and put you at greater risk of dealing with health concerns such as diabetes, increased blood pressure, high cholesterol and increased risk of heart attack.

2. LOWER RISK OF DISEASE, DEATH AND FUNCTIONAL LIMITATION

In addition to maintaining a healthier weight, possessing higher levels of muscular strength, which is created by using a regular resistance training program, is associated with a lower risk of all-cause mortality, fewer cardiovascular disease (CVD) events and lower risk of developing functional limitations.^{3,4,5}

3. MORE ENERGY, LESS FATIGUE

Research indicates that regular resistance training may increase one’s “energy” levels while also decreasing feelings of fatigue.⁶ This comes as no surprise since, as discussed previously, resistance training can help to make improvements in body composition. Put simply, carrying around more body fat makes you work harder both in life and in sport. Therefore, the more extra body fat you’ve got, the quicker you’ll get tired and feel fatigued. Following a regular resistance exercise plan can not only help you drop fat, especially when combined with good nutritional habits, but will help you to become more energy efficient and feel better throughout the day.

4. HELPS TO PREVENT BONE LOSS, EVEN WITH OSTEOPOROSIS

In addition to promoting muscle strength and mass, resistance training also effectively increases bone mass (i.e., bone mineral density and content) and bone strength, and may reduce the chance of developing musculoskeletal disorder (e.g., conditions of the bones, muscles, joints and ligaments) such as osteoporosis.^{7,8} Additionally, resistance training may help to slow down or even reverse the loss of bone mass in people with osteoporosis.⁹

5. LESS ANXIETY AND DEPRESSION

Research has shown that resistance training, and physical exercise in general, may prevent and improve depression and anxiety. Studies dating back to 1981 have concluded that not only can regular exercise, such as resistance training, improve mood in people with mild to moderate depression, but it also may play a supporting role in treating severe depression. Other research has even found that exercise’s effects lasted longer than those of antidepressants.¹⁰

In regard to anxiety, research has shown that physical exercise reduces anxiety in humans by causing remodeling to take place in the brains of people who work out. This evidence suggests that active people might be less susceptible to certain undesirable aspects of stress and anxiety than those of sedentary people.¹¹

6. IMPROVED BRAIN FUNCTION

Scientists once thought that our brains stopped producing new cells early in life, but more recently it’s been discovered that we continue to manufacture new brain cells throughout our lives. And, the most potent stimulant of brain growth is physical exercise.

Not only has research shown that physical activity seems to stimulate the production of new brain cells and neurons, while also promoting their survival, which facilitates attention and concentration and help “lock in” memories when they form, physical activity in later years was associated with lower risks of cognitive impairment, Alzheimer’s disease and dementia in general.¹² Another study concluded that if exercise began by early middle age, it reduced the risk of developing Alzheimer’s even further.¹³

7. BETTER SLEEP

Sleep is the way our bodies rest and recover. And, in addition to elevating mood and reducing stress, research has documented the benefits of exercise to improving sleep patterns, which can help you become more alert in the daytime and also help promote more sleepiness at night.¹⁴

Let’s face it, if you’re regularly exercising, especially engaging in a challenging resistance training program, your body will need to rest and recover, therefore making it more likely that your sleep will improve.

BRINGING HEALTH BACK TO HEALTH AND FITNESS TRAINING

Although the general health benefits of enhancing muscular fitness have become well established over the past few decades, many fitness professionals and gym rats have forgotten these realities, or simply choose to ignore them, while holding the delusion that one is wasting their time unless one is training for a very specific physique or performance goal.

The value of resistance training goes far beyond trying to get a bigger deadlift or looking better on the beach. Those goals aren't for everyone. Using resistance training to stay active and improve one's overall health while also enjoying the physical challenge it provides is a perfectly worthwhile goal to have.

Nick Tumminello is the owner of Performance University in Fort Lauderdale, Florida. He's also the author of the book Strength Training for Fat Loss and the DVD by the same name. For more information visit www.NickTumminello.com.



Photo: Per Bernal

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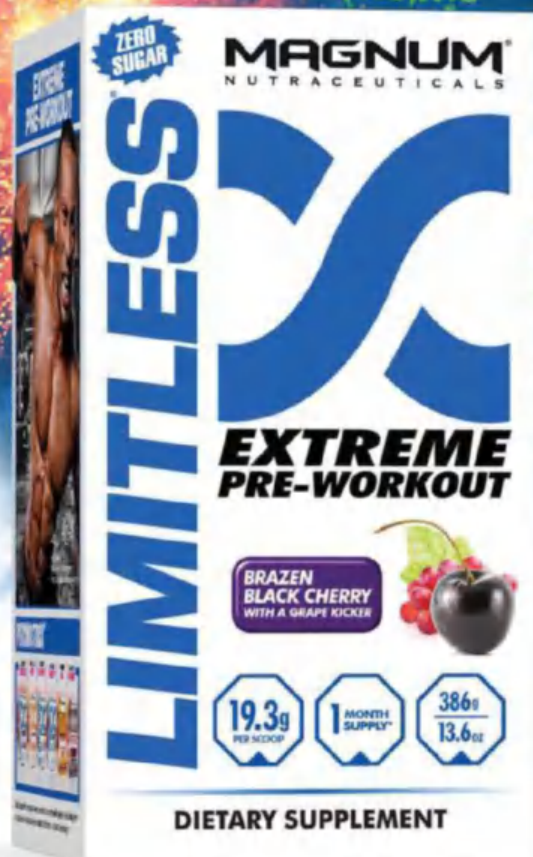
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